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# Introduction to Grammatical Analysis

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## P R E F A C E

This Handbook is one of a series published by the British School of the Summer Institute of Linguistics. These Handbooks are designed for use in conjunction with its courses and are intended primarily for the benefit of the students at S.I.L. They have, however, been made available more widely following requests for them.

Lesson materials and textbooks at our S.I.L. are usually the result of team-work. This Handbook is no exception. The materials in it have been in use for many years at our School. They were originally developed by John Bendor-Samuel in the 60's. Over the years several staff have contributed to them in a variety of ways, particularly Stephen Levinsohn, Constance Naish and Mona Perrin. More recently Elaine Thomas has re-written and expanded them with John Bendor-Samuel having more of an editorial and consultant role.

All our teaching materials are under constant review and adaptation. Any comments and suggestions therefore are warmly appreciated. They will be given serious attention and where appropriate incorporated into later editions of this Handbook.

In addition to its courses in Britain, the Summer Institute of Linguistics conducts both introductory and more advanced courses in Linguistics at centres in other parts of the world. Details of courses and of publications are available on request.

John T. Bendor-Samuel

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## CHAPTER 1

## INTRODUCTION

1.1 LANGUAGE COMPRISSES UNITS AND PATTERNS

Language is patterned activity. When a person speaks he makes certain specific sounds, and he does this in specific sequences which form regular patterns. Specific sequences of sounds carry specific meanings. These stretches of sound are also arranged according to definite rules in specific patterns. The listener responds to the sounds he hears because he has mastered these rules and reacts automatically to them. He may not be able to describe the patterns his language uses, but he demonstrates his mastering of them by his ability on the one hand to hear the sounds and respond to them appropriately, and on the other hand to make the sounds and be understood by another person who has mastered that particular language.

Languages comprise various units which are arranged in a limited number of patterns. When we speak we use units of sounds, units of grammar, units of meaning at one and the same time. The linguist studies both the individual units and their arrangement. One language differs from another not only because it utilizes different units, but also because these units occur in different patterns. LEX  
GRAM

Language X may employ 20 consonants whereas Language Y may only use 15 consonants. In addition, Language Y may differ from Language X in that it has a consonant pattern which involves up to 3 consonants occurring together as a cluster whereas Language X only has clusters of 2 consonants. In the case of Language X the second consonant in such a cluster is limited to one particular consonant. This restriction does not occur in Language Y. So it immediately appears that these two languages differ not only because they employ a different number of consonants, but also the patterns in which these consonants occur are very different.

In grammar too, there are units and patterns. Grammar deals with stretches of speech which have meanings. These are the units in grammar corresponding to the sounds of phonology. Words, for instance, are one kind of grammatical unit. Sentences are another kind of grammatical unit. In learning a language it is not enough to learn all the units - for example, to learn every word in the dictionary. Indeed it is not even possible to learn all the units - for instance, to learn every possible sentence. The student must learn the patterns into which the words fit, otherwise he cannot talk. If he has mastered the grammatical patterns even if he has only learnt a small proportion of the grammatical units, e.g. words, he can still communicate effectively.

Just as there are different sounds from language to language, so there are different grammatical units, and equally as there are different

We are accustomed to the fact that simple grammatical units like words vary from language to language. When we encounter a language which we have not met before we expect the words to be totally different from the words of our own language. We do not always realise that the grammatical patterns will be equally different. Just a comparison of different ways in which languages form questions will illustrate something of how much variety is possible.

ENGLISH : Is the man going home tonight ?

HIXRARYANA : bàn yaka nteno  
His (own) house to he-goes (uncertainty)  
tobo kohsaya  
man night

ENGENNI : edei na gbe omu nanwumu inia a  
man the go home in-evening today question-marker

TLINGIT :      yá    xána    nél-de    kgwágút    ege  
                   this evening home-to he-will-go question-marker  
                   wé    qá  
                   that man

## 1.2 OBJECTIVES OF THE COURSE

In the light of these general considerations of the nature of language the following objectives have been set for this course :

1. We will study different grammatical patterns, in order to see how great a variety is found in natural languages. This will enlarge our linguistic horizons and prepare us to face the grammar of a strange language. It will also enable us to become consciously aware of the grammatical patterns of our own language. All this will help us so that we do not unconsciously expect to find the grammatical patterns of our own language when we study another language. In this way we will avoid imposing our patterns on the other language.

2. We will discuss methods of handling a great variety of grammatical patterns found in languages, so that we have a way of grasping the essential patterns of the language we shall be learning. There are many different ways of handling the grammar of languages, and various linguists have developed different systems of grammatical analysis. These various "models" do, however, have many common elements. We shall try to keep as much as possible to this common ground on which all linguists build their analytical procedures. In doing this we shall be using a model called the Syntagmatic model (or the Structure-Function model). Other theories and models are studied in the Advanced Course. Our emphasis will be on simple procedures for handling grammatical data, rather than on grammatical theories as such. Any procedures are inevitably based on some grammatical theory, and we believe the procedures we shall teach you are theoretically valid, but we shall not attempt to discuss the theoretical groundwork in this course. Not because it is unimportant, but because it lies outside our immediate aims.

#### 1.4 THE GRAMMATICAL HIERARCHY

In order to describe the complex grammatical patterns found in a language, it is necessary to divide the analysis into stages, so that, for example, in describing the sentence above, the complexities of the subject construction are not dealt with at the same time as the description of the basic sentence structure. So in every language a number of levels (or stages) in the description are set up. Each level is termed a rank. The number of ranks will vary from language to language, but the following are the most frequent :

discourse, paragraph, sentence, clause, phrase, word, morpheme\*

The whole set of ranks constitutes the grammatical hierarchy.

At each rank there is one and only one grammatical unit. Thus at the sentence rank there is the sentence, at the clause rank the unit is the clause, at the phrase rank the unit is the phrase, etc. The name of the grammatical unit also serves as the name of the particular rank.

The following sentence is presented to illustrate the various ranks and units which are involved in its structure.

'Having come home, my brother repainted the two old tables'.

It can be divided into two clauses :

Having come home / my brother repainted the two old tables.

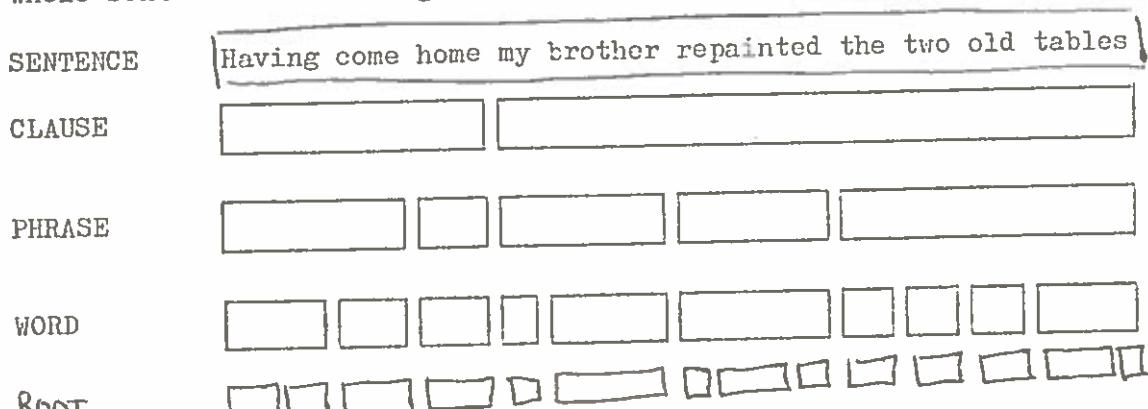
These clauses are termed elements of the sentence.

Now look at the second clause : 'my brother repainted the two old tables'. This can be divided into three phrases :

my brother / repainted / the two old tables

Notice that a phrase may be long : the two old tables, or short : repainted. Even if a phrase consists only of one word, it is still useful to consider the clause as made up of phrases.

Each phrase can be divided into words. So the structure of the whole sentence can be diagrammed as follows :



\* Note : The term morpheme will be explained and illustrated in the following chapter.

## CHAPTER 2

### WORD ANALYSIS

#### 2.1 THE MORPHEME

The lowest unit in the hierarchy is not the word, as a word can often be broken into meaningful parts. For example, two words in the sentence analysed in the previous chapter can be broken down still further :

repainted      re-paint-ed      tables      table-s

Each of these parts is termed a morpheme. Some morphemes have lexical meaning, e.g. -ed signifies past tense, -s signifies plural.

The morpheme is defined as "the smallest unit of grammar". Any unit which cannot be further subdivided is therefore a morpheme. Morphemes may contain a number of different sounds but they do not contain any further grammatical unit.

The size of a word, e.g. whether it has one or several syllables, has nothing to do with its status as a morpheme. "Elephant" is a simple morpheme, so is "Caterpillar", while smaller words like "undo" are two morphemes. "Undo" can be broken down into two parts : 'un-' meaning 'negative' and the verb 'do'. "Elephant" and "Caterpillar" cannot be broken down into smaller parts.

Note that it is irrelevant that the last part of 'elephant' is '-ant' and of 'caterpillar' is '-pillar', since the morpheme 'ant' has nothing to do with the huge four-footed beast, nor does the 'pillar' which is part of a building have anything in common with the crawling creature. It is accidental that frequently some syllables in a morpheme may correspond to another morpheme. Where there is no grammatical or lexical meaning involved, this is treated purely as a phonological feature. The two words have some similarity in their sounds, but this does not mean they are the same morpheme.

A word may contain any number of morphemes from one upwards. The following sets of words illustrate some morphemes in English. (Note the problems sometimes caused by English spelling e.g. in beginn-ing).

end	agree	begin
end-s	agree-able	beginn-er
end-ing	agree-ment	beginn-ing
un-end-ing	dis-agree-ment	beginn-ings
un-end-ing-ly	dis-agree-ment-s	

#### 2.2 IDENTIFICATION OF MORPHEMES

In every language it is necessary to identify the morphemes. When you already know a language it is not difficult to break down its words

These procedures can now be applied to the following data from Jebero - Peru in order to identify the morphemes.

1. nun <sub>ə</sub> fa	'a little canoe'
2. nun <sub>ə</sub> sawək	'my little canoe'
3. wilafə	'a little child'
4. tulapəŋ	'your leg'
5. piðəknəŋ	'his house'
6. piðəklusa?	'houses'
7. piðəkpəŋlusa?	'your houses'

The following is the list of morphemes.

-lusa?	'plural'
-nəŋ	'his'
nun <sub>ə</sub> -	'canoe'
-pəŋ	'your'
piðək-	'house'
-fa	'little'
tula-	'leg'
-wək	'my'
wila-	'child'

### 2.3 PATTERN OF MORPHEMES

Besides identifying morphemes correctly it is important to note that morphemes occur in specific sequences, not at random. In any word which consists of more than one morpheme, the various morphemes occur in a definite pattern. Indeed an awareness of the patterns in which groups of morphemes occur frequently assists the identification of morphemes and confirms our analysis of the morphemes in specific words.

Illustrative data based on Zaire Swahili :

1. ninasem	'I speak'
2. wunasem	'you speak'
3. anasem	'he speaks'
4. wanasem	'they speak'
5. ninaon	'I see'
6. nilion	'I saw'
7. ninawaon	'I see them'
8. niliwuon	'I saw you'
9. ananion	'he sees me'
10. wutakanion	'you will see me'

In order to discover the pattern of the morphemes we begin by charting the order of the morphemes in the longest word i.e. no. 10, writing each morpheme in a separate column.

10. wu-                    -taka-                    -ni-                    -on

Further illustrations of free and bound forms - from English:

Free + bound	cat + -s	turn + -ing	quick + -ly
Bound + free	un- + tie	re- + form	en- + courage
Free + free	black + bird	green + house	match + box

## 2.5 ROOT AND AFFIX

Words consisting of more than one morpheme have a nuclear part. The nucleus is called a root and is in contrast to the non-nuclear (=peripheral) morphemes which are called affixes. In a word like blacker, black is the nucleus or root, and -er is the peripheral element or affix.

Some words have two (very occasionally more than two) roots. A word like blackbird is made up of two words black and bird.

The root may be of any length, bound or free. An affix is a non-root, non-nuclear bound form.

The selection of what is nuclear and what is peripheral in a particular construction is not always obvious. The following criteria may be used to help determine the nuclear part :

a) Independence : nuclear parts tend to stand alone, whilst peripheral parts may not. For example, affixes are bound forms, while roots tend to be free.

b) Class size : nuclei tend to belong to very large open classes (i.e. groupings consisting of a (theoretically) unlimited number of forms that may occur in a given place in a construction).

Peripheral parts belong to smaller closed classes (i.e. groupings consisting of a strictly limited number of forms that may occur in a given place). For example, examine the following sets of words :

dogs, chairs, coats, hills, lakes  
goodness, gentleness, blackness, thickness  
walked, jumped, looked, studied

All the words consist of two morphemes. In each case the first morpheme belongs to a large open class, i.e. there is no end to the list of words which can be pluralised by adding -s, or of adjectives which can be made into nouns by the suffix -ness, or of verbs which can be put into the past tense by the suffix -ed. Whereas the second morphemes, namely -s, -ness and -ed each belong to small closed classes. There are not many other suffixes which can be added to nouns or verbs or adjectives in English.

## 2.6 TYPES OF AFFIX

Affixes are divided into four types :

a) Prefix : an affix that precedes the root, e.g. un-clear, in-complete, dis-appear.

iii) Tone

Highland Mazatec (Mexico) a<sup>3</sup>ma<sup>3</sup>li<sup>2</sup> Can you do it ?

a<sup>3</sup>ma<sup>3-2</sup>li<sup>2</sup> Can you really do it ?

The upglide to tone 2 is the morpheme meaning 'really'.

Bekwarra (Nigeria) (Mid tone unmarked: high tone ' : low tone ' : )

abe éfàà 'they grind' abe éhàrà 'they answer'

abe efàà 'they ground' abe ehàrà 'they answered'

abe èfàà 'they should grind' abe èhàrà 'they should answer'

High tone on the pronominal prefix marks present tense;

Mid tone on the pronominal prefix marks past tense;

Low tone on the pronominal prefix marks subjunctive.

Mundani (Cameroon)

afú? 'big valley' áfú? 'small valley'

akf'b 'ladle, big spoon' ákf'b 'spoon'

atf 'chair' átf 'stool'

High tone on the initial vowel signifies the diminutive.

## 2.7 MORPHEMES WITH UNFAMILIAR MEANINGS

Languages may use affixes to mark categories which are quite unfamiliar to speakers of other languages. The distinction of meaning can be shown, of course, in these other languages, but sometimes only by rather complex descriptive phrases - not just by affixes.

Some examples :

Hupa - California (In Nida's Morphology - taken from R. Hall Jr  
Leave your Language Alone)

xonta 'house now existing'

xortaneen 'house formerly existing (i.e. in ruins)'

xontate 'house that will exist (i.e. not yet built)'

Aztec - Mexico (In Nida's Morphology)

moma 'your hand'

moma.ci 'your honorable hand'

moma.wa 'your hands'

moma.ciciwa 'your honorable hands'

Hixkaryana - Brazil

komokye 'I came long ago' (distant past)

komokno 'I came just now' (immediate past)

komokraka 'I came' (past/recent past)

momokno 'You came just now'

Tlingit - Alaska (glottalization of consonants omitted)

1. nagúttʃ 'he goes frequently'

2. a xsatíntʃ 'he sees it often'

3. askdówtʃ 'he always knows'

4. yoo akayahék 'he's rubbing something'

5. yoo s ya.átk 'they go back and forth'

In each case it is necessary to decide whether the affix is another member of an order already on the chart, in which case it can be written in the appropriate column, or whether it is a member of a new order, in which case an additional column must be added to the chart. This can be illustrated from the following data based on Turkish.

1. kirdi 'it broke'
2. kirildi 'it was broken'
3. kirilmadi 'it was not broken'
4. kirindi 'it broke itself'

From this amount of data it will be necessary to set up 3 columns after the root.

	root		negative		tense
3.	kir-	-il-	-ma-		-di
1.	kir-				-di
2.	kir-	-il-			-di
4.	kir-	-in-			-di

It will be seen that -in- 'reflexive' is a member of the same order of affixes as -il- 'passive' as they are mutually exclusive and occur in the same position following the root, and preceding the tense.

Additional data :

5. kiriyordi 'it was breaking'
6. kirmayorsin 'you are not breaking'
7. kiriliyordim 'I was being broken'
8. kirdisin 'you broke'
9. kirinajaksin 'you will break yourself'
10. kirajakdim 'I was going to break'

In no. 5 the affix -ivor- 'continuous' occurs. It is not similar to any affix which has so far occurred, and therefore a new column is required on the chart. Similarly with -sin '2nd pers. sg.' which follows the tense suffix, a new column is needed. In no. 7 -m '1st pers. sg.' denotes the category of person in the same way as -sin, and occurs in the same position, and is therefore a member of the same order. In no. 9 -ajak occurs preceding the person marker and would seem to be another member of the order marking tense. But in no. 10 it is seen that it co-occurs with the tense marker and therefore cannot be a member of the same order, but rather is a member of the same order as -ivor- 'continuous'. (This shows that in Turkish the concept of future is more of an aspect, than a tense).

So the chart of the whole data will be as follows :

3.	kir-	-il-	-ma-		-di	
1.	kir-				-di	
2.	kir-	-il-			-di	
4.	kir-	-in-			-di	
5.	kir-			-iyor-	-di	
6.	kir-		-ma-	-iyor-		-sin
7.	kir-	-il-		-iyor-	-di	-m
8.	kir-				-di	-sin
9.	kir-	-in-		-ajak-		-sin
10.	kir-			-ajak-	-di	-m

## CHAPTER 3

## PHRASE ANALYSIS

## 3.1 THE STRUCTURE OF A UNIT : ELEMENTS

We have already seen from the grammatical hierarchy that each unit is made up of elements which are units of the rank below. So the elements of phrases are words, and these words are arranged in a certain pattern. Just as charting the data can help one discover the pattern of morphemes in the word, so charting can be used to discover the structure of elements at other ranks.

## Illustrative data      Bekwarra - Nigeria

1.	(e) ba fia	'(they) will pay'
2.	(e) fia ma	'(they) have paid'
3.	(e) ba fia re	'(they) will not pay'
4.	(e) fia	'(they) paid'
5.	(e) ka fia	'then (they) paid'
6.	(e) ka ba fia	'then (they) will pay'
7.	(e) fia re	'(they) did not pay'
8.	(e) fia ma re	'(they) have not paid'
9.	(e) ba fia ma	'(they) are about to pay'
10.	(e) ka ba fia re	'then (they) will not pay'

In order to discover the structure of the verb phrase we chart the data. (The (e) is the subject pronoun given as (they) in the English translation, so that is not included in the chart). As was done when charting the morphemes of a word, it is helpful to look at the longest utterance before setting up the columns. Choosing no. 10 as a starting point, the following columns with tentative labels are set up.

	Temp.	fut.	verb	neg.
10.	ka	ba	fia	re

So far there is only one order of words after the verb, namely re 'negative'. But when we look at no. 2 we find that ma 'perfective' also occurs following the verb, but we cannot tell whether before or after the negative. It is only when we come to no. 8 that we find the perfective occurs before the negative.

A complete chart of the data would look like this.

	temp.	fut.	verb	perf.	neg.
10.	ka	ba	fia		re
1.		ba	fia		
2.			fia	ma	
3.		ba	fia		re
4.			fia		
5.	ka		fia		
6.	ka	ba	fia		
7.			fia		re
8.			fia	ma	re
9.		ba	fia	ma	

Notice that the left hand side shows what unit is being described and the righthand side shows what the elements are, their order and their status. Between the unit and the elements an arrow is used to show that what follows is a description of the structure of the unit. (If an obligatory element occurs immediately following the arrow, the plus sign is omitted).

Restrictions on the occurrence of elements : Just as in the description of the word restrictions on the occurrence of morphemes have to be stated, so similar statements are needed to describe the structure of the phrase (or any other unit). It is especially important to note the maximum number of attributive elements which actually occur, otherwise one may use phrases which are too long and clumsy when speaking or translating.

The maximum and minimum number of elements and any mutual restrictions between words can be discovered from the chart of the data. In the Bekwarra verb phrase we see the following:

maximum number of elements = head and 3 attributives  
 minimum number of elements = head only.

Notice that in a limited amount of data, there will often be restrictions on the occurrence of elements which are not true of the language as a whole. So statements on restrictions need revising as more data is acquired.

### 3.4 MORE COMPLEX PHRASE STRUCTURES

It frequently happens that some units at a rank may be more complex than other units. At phrase rank the nominal phrase is usually more complex than the verb phrase. Consider the following data from Tlingit - Alaska.

1. ax yées shát 'my young wife'  
     my young wife
2. daxnax doo shát yéeyee 'his two former wives'  
     two his wife former
3. ldakát wé yées káa 'all those young men'  
     all that young man
4. ldakát káa 'all men'  
     all man
5. wé jinkàadinax káa shàan 'those ten old men'  
     that ten man old
6. yá shaawát shàan 'this old woman'  
     this woman old
7. ldakát jinkàadinax yées káa 'all ten young men'  
     all ten young man
8. ldakát doo káawoo 'all his men'  
     all his man-possessed
9. yá ax káawoo yéeyee 'my previous husband (colloquial)  
     this my man-poss former (lit. this my former man)
10. wé kustín káa 'that giant/gigantic man'  
     that gigantic man
11. ldakát kustín káa 'all giants/gigantic men'  
     all gigantic man
12. wé tléinax ax shát 'that one wife of mine'  
     that one my wife

Examples of different types of units at various ranks in English :

WORD	simple (1 root)	cat, table
	compound (2 roots)	blackbird, matchbox, armchair
	complex (root and affix)	arrival, instruction, wickedness
PHRASE	NP types : noun head pronoun head demonstrative head	the pretty girl she this
CLAUSE	transitive intransitive ditransitive	John finished the meal. Dave slept. He gave me the dish.
SENTENCE	coordinate subordinate	Mary studied hard and she attended every lecture. If that was a fox, then I need new glasses.

### 3.6 TYPES OF NOMINAL PHRASE

In most languages the selection of the head word determines which and how many attributives can occur in the phrase. For example, English nominal phrases with a noun as head can be expanded in a variety of ways which are quite different from the way phrases with a numeral as head can be expanded. Consider the data from Engenni - Nigeria below :

1. edei yi  
man came 'A man came'
2. edei vie yi  
man good came 'A good man came'
3. olo vie me yi  
friend my 'My good friend came'
4. amo gbéri yi .  
child small 'A small child came'
5. ikirikiri imo yi  
all children 'All the children came'
6. ikirikiri imache me vie yi  
all relations 'All my good relations came'
7. ikpoli edei bo yi  
many man great 'Many important people came'
8. ikirikiri yi  
all came 'Everybody came'
9. omini ei vie yi  
child his 'His good child came'
10. ikpoli yi  
many came 'Many came'
11. olo ei wu  
friend died 'His friend died'

In the English phrases this book and these books the forms of the noun and the demonstrative show that the two words are related. (Notice that you cannot say this books or these book). This is known as agreement, and is a widely used kind of syntagmatic feature. It is useful to distinguish two main kinds of agreement, concord and government, though in some cases there is a measure of overlap between them.

a) Concord : This occurs when two or more words each carry some marker, not necessarily of the same form, which signals the same grammatical category (e.g. number, person, class, gender i.e. masculine, feminine, etc.). In the phrase cited above, there is concord between the noun (book) and the demonstrative (this) with respect to number.

In Latin there is concord between a noun and adjective with respect to gender, number and case, as in :

filius bonus	'a good son'	filii boni	'good sons'
puella bona	'a good girl'	puellae bonae	'good girls'

The above forms are in the nominative (i.e. subject) case. Compare them with the following which are in the accusative (i.e. object) case :

filium bonum	'a good son'	filios bonos	'good sons'
puellam bonam	'a good girl'	puellas bonas	'good girls'

The data from Bassari - Ghana given below is an example of the concord system which is found in many African languages, particularly in Bantu languages and in some others belonging to the Niger-Congo family.

Illustrative data : Bassari - Ghana

1. uni	umbini	'this person'	biniib	bimbini	'these persons'
2. uboti	umbini	'this chief'	bibotiib	bimbini	'these chiefs'
3. diyin	dimbini	'this name'	ayin	ŋimbini	'these names'
4. dibil	dimbini	'this seed'	abil	ŋimbini	'these seeds'
5. kusaau	kumbini	'this farm'	tisaati	timbini	'these farms'
6. kukabuu	kumbini	'this basket'	tikabuti	timbini	'these baskets'

The following statement can be made to describe the concord system.

There is concord within the nominal phrase with respect to class and number between the noun and the demonstrative, determined by the head of the NP and marked by affixes as follows :

		NOUN	DEMONSTRATIVE
Class 1	singular	u-	u-
	plural	bi- -ib	bi-
Class 2	singular	di-	di-
	plural	a-	gi-
Class 3	singular	ku- -u	ku-
	plural	ti- -ti	ti-

Note the important points about the statement.

The following statement can be made to describe the system of government. (Note how it includes the six points of information as in the statement of concord.)

There is government within the noun phrase with respect to class, the form of the article and the adjective being governed by the head of the nominal phrase as indicated in the following chart :

NOUN	ARTICLE	ADJECTIVE
Class 1	i-	no prefix
Class 2	a-	no prefix
Class 3	i-	ka-

Note that the information as to which class a noun belongs to would need to be given in the dictionary.

In learning another language, agreement of both kinds is very important and it is essential that these patterns are thoroughly mastered.

Agreement is not limited to phrases but is a feature which marks clauses also (see page 42 ).

### 3.8 OTHER MORPHEMES MARKING RELATIONSHIPS WITHIN THE PHRASE (cf. 3.2.c)

In addition to morphemes marking agreement, there may be other morphemes marking relationships between the elements.

Consider the English phrase men, women and children . It consists of three nouns with a conjunction linking all three, i.e. marking that all three are related to each other, even though it actually occurs only once, between the last two nouns. If the nouns are expanded (by adding adjectives, etc.) the conjunction remains the same and has the same function. It clearly has a different status from the nouns and their attributive elements, since it serves to link them all together. For this reason we do not want to regard it as an element of the phrase, but rather as a syntagmatic feature marking co-ordination. The morpheme "or" in a phrase such as 'men, women or children' has a similar function.

## CHAPTER 4

## CLASSES OF UNITS

4.1 FUNCTION

We have already seen that the grammatical hierarchy is made up of a number of ranks. So far, in working out the structure of units we have been working down the hierarchy e.g. phrases are made up of words, words are made up of morphemes. But each unit also has a function as an element of the unit in the rank above. So, working up the hierarchy, morphemes function as elements of words, words function as elements of phrases etc. The highest unit in the hierarchy does not have any function in this sense.

We will use the following English sentence to illustrate how units function as elements of the unit above.

NPs	VP	NPo	AP
That young child / plays / the piano / very well			
Dem Adj Noun	Verb	Art Noun	Intens Adv

The first NP functions as the subject and first nuclear element of the clause (i.e. next rank above). The second NP functions as object and third nuclear element of the clause. The noun 'child' functions as the head of the NP (i.e. next rank above). The adjective 'young' functions as an attributive of the NP. Notice that in describing the function of a unit, we state both in what unit it occurs (i.e. its distribution) and also what its relationship is to other elements in the unit. At clause rank, obligatory elements are referred to as nuclear, and optional elements as peripheral. Thus the adverbial phrase functions as the final peripheral element of the clause.

We will now expand the original sentence.

That young child plays the piano very well, but he prefers the guitar.

The original clause now functions as the first element of the compound sentence (i.e. next rank above).

To recap: a unit functions as an element of a unit in the rank above in the hierarchy, and is made up of elements in the rank below.

4.2 GROUPING INTO CLASSES

Units at a given rank do not all function in the same way, e.g. in English, nouns and verbs do not function in the same sort of phrase, i.e. their distribution is different. Verbs do not function as elements of the NP but as elements of the VP. Nouns do not function as elements of the VP, but as elements of the NP.

2. kukrē kra eats child 'The child eats'

3. ape kra works child 'The child works'

4. kukrē kokoi rats eats monkey big 'The big monkey eats'

5. ape kra met̄ works child good 'The good child works'

6. ape met̄ kra works well child 'The child works well'

7. ape rats̄ mi met̄ works a lot man good 'The good man works a lot'

8. kukrē rats̄ kokoi punui eats a lot monkey bad 'The bad monkey eats a lot'

9. ape punui mi pinet̄ works badly man old 'The old man works badly'

10. ape pinet̄ mi works a long time man 'The man works a long time'

Analysing the clause into two phrases NP and VP, the data is charted as shown below.

Note. It is a more concise, and therefore preferable, analysis to consider the adverb as an element of the VP, rather than to set up an AP, since the adverb is never expanded. It is not usually advisable to set up a unit at a rank if it would always be identical with the unit at the rank below.

VP		NP	
Head	Attributive	Head	Attributive
kukr̩	m̩t̩	kra	rat̩
ape	rat̩	kokoi	m̩t̩
	punui	m̩i	punui
	pijet̩		pijet̩

On examining the lists, we see that the words that function as head of the NP and of the VP are different, and these words do not function anywhere else. These groups of words therefore form two distinct classes because they function as the head element of two different units at the rank above.

But the list of words that function as attributive in the two phrases are identical. Therefore these words form one class, not two, since they can all function as attributives of the same units at the rank above.

Class B affixes occur following both noun and verb roots. These can be called person markers.

-be '3rd pers. sg.'  
-du '1st pers. pl.'

Notice that this class functions in more than one unit at the rank above, i.e. as an element of both noun and verb. This is comparable with the Qualifiers in the Apinavé data.

Class C affixes occur preceding noun roots only. There is only one member.

S- 'possessive marker'

#### 4.6 SUBCLASSES OF THE WORD

As has already been seen, units sometimes function as elements in the rank above in more than one way. In such instances there may be a complete overlap so that all the forms which function as a particular element also function as a second element in the structure. In such cases all these forms are regarded as a single class. On the other hand it may well be that while all members of a class function as one element in the structure, only certain members of the class function as the second element in the structure.

Compare English 'house' and 'home' :

'He has a nice house/home'  
'He went home'

House and home are members of the class of items which function as head of a Nominal Phrase which we call nouns. Home also functions as head of a Locative Phrase (LP) as in the second sentence. House cannot function in the same way in such a phrase. Within the whole class of nouns therefore we need to distinguish the fact that some members of this class also function in a LP. To distinguish nouns which function in both kinds of phrase from the nouns which cannot function in the LP, two subclasses would be set up, the former being assigned to one subclass and the latter to the other. In some cases, three or even more subclasses may be required.

The following data from Guarani - Bolivia illustrates subclasses of the Qualifier.

#### A - Qualifier Phrase - Nominal Phrase

1. hasi tovajara ?i	'Little brother-in-law is sick'
2. hasi eterei	'He is very sick'
3. posi tupi	'The gods are angry'

17. ogwereko vai kuñatai ?i      'The little girl treated (him) badly'  
 treat badly girl little

18. ogwereko poñi      kunumi      'The boy treated (him) with anger'  
 treat with-anger boy

19. ogwereko vai eterei      'He treated (him) very badly'  
 treat badly very

Here is the chart for Part B of the data. (A long utterance has been charted first to facilitate setting up the columns).

	VP			NP	
	Verb	Qual	Intens	Noun	Adj
10.	oiko	puku		tupā	
8.	oiko	porā			gwasu
9.	oiko	hasi			
11.	oiko	porā		tovajara	
12.	oki			kañigwera	
13.	oki	rusu			
14.	ogwereko	vai			
15.	ogwereko	poñi			
16.	oiko	hasi		heindirā	
17.	ogwereko	vai		kuñatai	?i
18.	ogwereko	poñi		kunumi	
19.	ogwereko	vai	eterei		

Comparing this chart for Part B with the one for Part A, we notice :

1. There is one new word class - the verb class.
2. The noun and adj. classes have additional members  
 Noun class - heindirā 'sister'  
 kañigwera 'hidden-ones'  
 kunumi 'boy'
3. There are additional members of the qualifier class  
 porā 'well'  
 rusu 'heavily'  
 vai 'badly'

These words function only in the VP while the rest of the class functions in both the Qual P and the VP. So it is necessary to subdivide the class. Subclass A functions in both phrases, subclass B functions only in the VP. Below is an example of how to describe subclasses of words. Note that when subclasses are set up, every member of the complete class must be assigned to one subclass or another.

The Qualifier Class functions as head of the Qual P and as first attributive element in the VP. Subclasses are set up as follows :

Subclass A functions both as head of the Qual P and as first attributive element in the VP.

#### 4.7 PARTICLES

In classifying words on the basis of their function, a division needs to be made in some languages between major words and particles. Although particles may be phonological words, they often do not fit into the grammatical hierarchy as elements of phrases.

Characteristics of the particle are :

1. It is an uninflected root (i.e. it cannot take any affixes).
2. It has limited distribution. Often it functions only as a syntagmatic feature, rarely as an element of the phrase. (e.g. Engenni a'question marker'
3. It is a member of a closed class : (e.g. Engenni question particles : a 'general question', sam 'alternative', ɛ 'doubting question').
4. It may have special phonological characteristics (e.g. stress, tone, limited syllable pattern- e.g. in Bekwarra ɛ and ŋ do not occur initially in major word classes, but may do in a particle).

In the data from Tataltepec Chatino - Mexico given below, notice how that the particles which are circled do not function as either head or an attributive in any phrase. In addition, they cannot be inflected, nor can they take sentence or clause stress, and thus are distinguished from major words.

Illustrative data : Tataltepec Chatino - Mexico

1. lo?o tjala Hlore tʃa? kje? nã kaku ngu?  
and will-arrive Florence in-order-that will-cook thing will-eat they  
tʃa? kaka tso?o tjikjee ngu?  
in-order-that will-be good stomach-of they  
'And then Florence will arrive to cook something for them to eat so that they will be content'
2. tsa Ndajú (su) ndi?i kiña?ã ñati  
will-go Anthony where living lots person  
'Anthony will be going to a populated place (where lots of people live)'.
3. tsa ngu? lo?o tjanú ngu? bi? (li?)  
will-go they and will-remain they those-particular then  
'They will go and will stay there then'.
4. si kulija? ngu? tso?o ña?ã ste? ngu? (li?)  
if is-rich they good looking clothes-of they then  
'If people are rich then their clothes look nice.'

## CHAPTER 5

## CLAUSE ANALYSIS

## 5.1 CLAUSE STRUCTURE

The same principles of analysis apply at clause rank as at phrase rank. So the structure of the clause is described in terms of elements, which are phrases, and syntagmatic features. The data below from Bisa - Ghana will be used to illustrate the analysis of the clause.

1. luban gusile bi nyi bi busu zaa la 'The old woman carried woman old the child the carry road along the child along the road'
2. nyi bi gi bi ze 'The child hit the dog' child the dog the hit
3. gwaa gusile bi gi bi ze zaa u 'The old man hit the dog man old the dog the hit road on on the road'
4. nyi bi luban gusile bi gaa daasi u 'The child led the old child the woman old the led market to woman to market'
5. gi bi nyi bi gaa par u 'The dog led the child dog the child the led house to to a house'
6. gwaa luban gusile ze 'A man hit an old woman' man woman old hit
7. gwaa bi gi bi busu par u 'The man carried the man the dog the carry house to dog to a house'
8. nyi gwaa bi ze daasi u 'A child hit the man child man the hit market to at market'

Just as charting helps the analyst to discover the structure of phrases, so charting is used in the analysis of the clause. In setting up the chart, choose the longest utterance as the starting point. Look for words functioning as heads of phrases, make tentative phrase breaks and label the phrases. (Later in this chapter the criteria for determining the boundaries of phrases will be discussed).

Columns are set up for each phrase and the whole data is charted thus.

	NP (subject)	NP (object)	VP	LP
1.	luban gusile bi	nyi bi	busu	zaa la
2.	nyi bi	gi bi	ze	
3.	gwaa gusile bi	gi bi	ze	zaa u
4.	nyi bi	luban gusile bi	gaa	daasi u
5.	gi bi	nyi bi	gaa	par u
6.	gwaa	luban gusile	ze	
7.	gwaa bi	gi bi	busu	par u
8.	nyi	gwaa bi	ze	daasi u

2. Replacability : If a single word may be replaced by a group of words without any other changes taking place in the structure of the clause, e.g. 'the man worked there' and 'the man worked in the factory', then the word may be better regarded as the head of a separate phrase.

3. Contiguity : Usually the elements of a phrase are contiguous but they are not always so, e.g. Didn't that man go ?

4. Mobility : If a word or a group of words may occur at more than one place in the clause, e.g. 'he stood there' and 'there he stood, not saying a word', it may be better considered a separate phrase.

5. Occurrence of syntactic markers : Syntactic markers are often useful in indicating the beginning or end of a phrase. For example, in Paumari the object marker -ra occurs at the end of the NPo.

6. Concord : Concord may show the extent of a phrase.

The application of these criteria can be illustrated from the following data from Chatino - Mexico.

Note : 'Se' is a name.

1. tjukwa <i>Si</i> sit here	'Sit here for a while'
2. ndjukwa    se tsāā sat here	'Se sat here earlier'
3. <i>Saa?</i> ndjukwa    se <i>Si</i> sat here	'Se sat here for a while again'
4. ndjukwa    se tsāā <i>ti</i> sat here	'Se sat here just a moment ago'
5. la ka ndjukwa sat here	'He sat here yesterday'
6. la tii ndja    se went	'Se went the day before yesterday'
7. la ka ti ndja se went	'Se went just yesterday'
8. lje ndjukwa se sat	'Se sat down very hard'
9. la ka lje ndja se went	'Se went ever so far yesterday'
10. la tii ti lje ndja se went	'Se went ever so far just the day before yesterday'
11. la tii ndjukwa <i>Si</i> <i>ti</i> sat here	'He sat here the day before yesterday just for a little while'

9. a:kalista:n nawan pedro lakapal  
after-that will-speak Peter quickly
10. ču'nca pedro wał  
thus Peter spoke
11. nawan laqa:ču ka:cisa:t  
he-will-speak everywhere early
12. wał a?ča maqluwa  
he-spoke here many-times

Here is a chart of the data.

Intro Word	Time <sub>1</sub>	NPs	Time <sub>2</sub>	Verb	NPs	locative	Adv	Time <sub>3</sub>
1.				wat				
2.	ču'nca			nawan			maqtuwa	
3.				wat			lakapat	
4.	čo'la			wat			maqtuwa	
5.	ču'nca	wan qa'wa:ču	laqali	nawan			laqali	
6.				nawan			tušuma'n	
7.		pedro		wat		laqa:ču		
8.	qo:tan	pedro		ki:wat			wampala	
9.			akalista:n	nawan	pedro		lakapat	
10.	ču'nca	pedro		wat		laqa:ču		
11.				nawan				ka:cisa:t
12.				wat	a?ča	maqtuwa		

The following conclusions regarding the analysis can be drawn from the chart :

a) the adverbs, locatives and time<sub>2</sub> words should be analysed as separate phrases as they are not always contiguous to the VP.

b) the time<sub>2</sub> words should be analysed as separate time phrases as they are mobile and can be expanded (nos. 5 and 6).

Note : the introductory word is not analysed as part of the structure of the clause as it is a syntagmatic feature of the sentence (see chapter 6 p. 61).

The formula for the structure of the clause in this Totonac data is

$$C1 \longrightarrow (TP_1) \ (NP_s) \ \uparrow + VP \ \downarrow (LP) \ (AdvP) \ (TP_2)$$

Note the broken arrows which indicate an alternative position of the phrase.

### 5.3 AGREEMENT AT CLAUSE RANK

Just as the relationship between the elements of the phrase may be marked by agreement, so agreement of both kinds may mark the relationship between phrases in the clause.

A. Concord : the following data from Tsonga - Republic of South Africa and Mozambique illustrates the operation of concord between the NPs and VP. (There is also concord between the noun and adjective in the NP which would be described at phrase rank).

The following data from Paumari - Brazil is a further example of government between the elements of the clause.

Note the following. Nego and Gisi are personal names, hado is feminine, sipatihi is masculine. -a is subject marker, -ra is an object marker. These are clause rank features.

1. Nego-a binofimania hado (man) wants knife	5. sipatihi-ranofimania Gisi banana wants (girl)
2. Nego-a binofimanira sipatihi (man) wants banana	6. sipatihi-ranofimanira Nego banana wants (man)
3. Nego hado-ranofimanira (man) knife wants	7. hado Nego-a binofimania knife (man) wants
4. Gisi hado-ranofimania (girl) knife wants	8. sipatihi Gisi-a binofimanira banana (girl) wants

The description of the government operating within the clause is as follows :

a) The NP immediately preceding the VP is marked as subject or object.

b) The form of the verb is governed by the noun functioning as head of the NP as follows :

- When the NP functioning as object is unmarked (or in other words when NPs immediately precedes the VP), the verb carries the prefix bi-.
- The suffix of the verb is governed by the gender of the noun in the unmarked NP as follows :

unmarked NP head	Verb suffix
masculine	-ra
feminine	-a

C. Cross reference : Quite frequently, languages may have agreement with respect to person between nouns or pronouns and other forms which signal person elsewhere in the clause (most frequently pronominal affixes in the verb word). Such agreement is referred to as cross-reference.

In the following data from Tlingit - Alaska the subject person is marked by a noun or free pronoun and also by a prefix to the verb. (Free pronoun and verb prefix are circled).

- ldakát, ooháán áwe haa káak wutoosítéen 'All of us saw our uncle'  
all we our uncle we-saw
- ch'a xát áwe doo tsálgee wxasítéen 'I alone saw his squirrel'  
just I his squirrel I-saw
- haa yátx'ee áwe yee këidlees has awoosítéen 'Our children saw your dog'  
our children your dog pl. he-saw
- yeehwáan áwe haa këidlees wodyeejàak 'You killed our dog'  
you our dog you-killed

The following data from Hixkaryana - Brazil will serve to illustrate the establishment of clause types in a language.

1. Oni wyaro nehjakoni amnehra 'It was like this a long time ago'  
this like it-was long-time-ago
2. Ethira nehjatkonzi toto komo amnehra 'The people were without-food they-were person group long-time without food a long -ago time ago'
3. Namfekyatkonzi ukukuru komo 'Some of them went hunting'  
they-went-hunting some group
4. Totjowni tjetja waka 'They went into the forest'  
they-went forest into
5. Woto yohoflatkonzi 'They were looking for game animals'  
game-animals they-were-looking-for
6. Hoñko woto 'The game (is/was) wild pig'  
wild-pig game
7. Koso Sarha tohosomi 'What (they were) looking for deer also thing-being-looked-for (was) deer also'
8. Kamara yoñtjowni hañaha 'Finally they saw a jaguar'  
jaguar they-saw-it finally
9. Bayane nehjakoni kamara 'The jaguar was fierce'  
fierce it-was jaguar
10. Bayanemzi rmahaña mokro 'That one (is/was) very fierce'  
fierce-one very that-one
11. Noseñehyatkonzi toto komo kamara hona 'The men were afraid of they-were-afraid person group jaguar to the jaguar'
12. Nekahitamjtjowni ukukuru komo 'Some of them ran away'  
they-ran-away some group
13. Towankafhemzi anaro komo 'Others (were) courageous'  
courageous-one other group
14. Kamara yotahatjowni hañaha moñamo 'These killed the jaguar finally'  
jaguar they-killed-him finally these-ones
15. Totjowni harha otwo hona 'They went back to the village'  
they-went back village to

The clauses are divided into phrases labelled, and then charted. A new chart is started whenever there is a different structure which may be a new clause type.

	Complement P	Verbal P	Nominal Ps	Temporal P
1.	oni wyaro	nehjakoni		amnehra
2.	Ethira	nehjatkonzi	toto komo	amnehra
9.	Bayane	nehjakoni	kamara	

## Clause types 2 and 3

Intransitiveobligatory absence of  $NP_0$ Transitiveobligatory  $NP_0$ 

different classes of verbs as head of VP (intransitive versus transitive)

## Clause types 1 and 2, 3

Stative

obligatory Comp P

Intrans., Transitive

different classes of verbs as head of VP (copula (stative) versus action verb)

5.5 POSSIBLE CLAUSE TYPES

Just as we have seen that there are various types of phrases which we can expect in a language (e.g. many languages have NP with pronoun as head, NP with demonstrative as head, NP with Noun as head, etc.), so there are many types of clauses which are commonly found. It must be stressed, however, that each language must be analysed individually, and the structures that are found must be grouped into the appropriate types by applying the formal criteria as demonstrated above.

Below there are some examples of clause types which frequently occur in languages. The English examples given are all verbal clauses, but in other languages some of the types may be non-verbal constructions e.g.

Equative	The book (is) a dictionary.	NP + NP
Descriptive	The book (is) beautiful.	NP + AdjP
Locative	The man (is) at home.	NP + LP

## Common clause types :

Di-transitive - 2  $NP_0$ , often  $NP_0$  and  $NP_{10}$  : John gave Mary a present.

Complex transitive - 2  $NP_0$ , usually  $NP_0$  and  $NP_{comp}$  : She thought him a dear.

Transitive - one  $NP_0$  : She kissed him.

Semi-transitive - verb of motion and Locative in place of  $NP_0$  : He went home.

Intransitive - no  $NP_0$  : He slept peacefully.

Stative - often description of state : John was happy.

Impersonal - no NPs or  $NP_0$  : It was springtime.

Active - optional  $NP_0$  ; used where there is no distinction between transitive and intransitive.

Attributive/Descriptive - may be verbal or non-verbal, with  $AdjP$  as nucleus.

Equative - usually 2 NP, a topic and a comment : John was Mary's sweetheart.

Locative - may be verbal or non-verbal clause ; if the latter, then LP as nucleus.

Nominal - NP as nucleus.

Eventive : The weather turned cold.

(Modification : when the Locative clause is negated, the locative marker -u is obligatorily absent).

In the following examples, | is again used to mark the boundary between phrases :

Nominal : fixt' awe  
'he is a medicine man'

ax kék'w awé | wé íxt'  
'that medicine man is my nephew'

aak'é atxá ayá  
'this is good food'

aak'é atxá ayá yá laak'ask  
'this black-seaweed is good food'

Locative : aat�ein dáanaa | doo jèewu  
              lots      money    his hand-LM  
              'he has lots of money'

tlefl dáanaa doo jèe  
neg money his hand-#  
'he hasn't any money'

ee xdonee | nèilu  
your friend inside-LM  
'your friend is at home'

tléil nèil ee xðonee  
neg inside-# your friend  
'your friend isn't at home/indoors'

Nyabwa (Ivory Coast)

Besides such types as transitive, intransitive, etc., the following types have been set up :

Reflexive :  $\omega^3$  dyi<sup>1</sup>dyri<sup>4</sup>- $\omega^2$  'they defended themselves'  
 (+NPs + VPreflex - NPo ; periphery very limited ;  
 reduplication of basic verb stem)

Auxiliary :  $\varepsilon^3$  se<sup>3</sup> bee<sup>24</sup> ... 'it isn't possible (that..)'  
 (+NPs + VPaux + NPo ; NPo is either a third person  
 impersonal pronom or a clause with projective aspec

Situational : a<sup>4</sup>nt<sup>4</sup>-e<sup>2</sup>-e<sup>4</sup> bli<sup>4</sup>bli<sup>4</sup>bli<sup>4</sup> 'we are jet black'

(+NPs +.VPsit + QualP ; the Qualitative Phrase can be one of a number of adverbial type phrases, but is obligatory)

Complement : i<sup>2</sup> no<sup>24</sup> du<sup>1</sup>-o<sup>2</sup>-o<sup>4</sup> di<sup>4</sup> da<sup>3</sup> yi<sup>1</sup> 'he's the one who is Didayi'  
 (+NPs + VPcomp + NPcomp; the NPcomp is found only in  
 this clause type).

### Kolami (India)

Intransitive	amd mangten he slept	'He slept'
--------------	-------------------------	------------

Semi-transitive                    add ellang seddin                    'She went to the house'  
    she house went

Transitive	amd	aambal	tinden	'He ate rice'
	he	rice	ate	

Stative	ramak poDam anDan	'Ram is tall'
	Ram tall is	

7. Ade do eseni	'Ade stole fish'
8. eseni kuya	'Fish is scarce'
fish is-scarce (verb)	
9. edei ne fina n'oko	'The man entered the canoe'
man the enter in-canoe	
10. Ade edei vie	'Ade is a kind man'
Ade man kind	
11. adide ne wu	'The rich man died'
rich-man the died	
12. edei dori ne Ade	'The tall man is Ade'
man tall the Ade	
13. Ade do	'Ade stole (it)'
Ade stole	
14. edei ne wu uwu odwei	'The man died a terrible death'
man the died death fearful	

After charting, it appears there are 4 different structures :

1. Equative	eq Cl $\rightarrow$ NP <sub>t</sub> + NP <sub>c</sub>	nos. 1, 10, 12
2. Intransitive	intr Cl $\rightarrow$ NP <sub>s</sub> + VP(LP)	nos. 2, 9, 11, 13
3. Transitive	tr Cl $\rightarrow$ NP <sub>s</sub> + VP + NP <sub>o</sub> (LP)	nos. 3, 5, 7, 14
4. Descriptive	desc Cl $\rightarrow$ NP <sub>s</sub> + VP desc	nos. 4, 6, 8

But on examining the structures, there is not enough distinction between nos. 2 and 3 to make them different types, so they can be united into one type : active.

Three types of clause can therefore be set up :

Type 1 Equative	eq Cl $\rightarrow$ NP <sub>t</sub> + NP <sub>c</sub>
Type 2 Active	act Cl $\rightarrow$ NP <sub>s</sub> + VP (NP <sub>o</sub> ) (LP)
Type 3 Descriptive	desc Cl $\rightarrow$ NP <sub>s</sub> + VP desc

Note that VP<sub>desc</sub> has to be labelled differently from the other VP because a different class of verbs functions as its head. These are verbs which all end in -ya.

### 5.8 DEMARCATIVE SYNTAGMATIC FEATURES

In analysing the structure of a grammatical unit there are often some parts which cannot conveniently be handled as elements of the unit, since they are not themselves units in the next lowest rank in the hierarchy. An example of this is the question marker in a question sentence, as in Engenni :

ediei ne do eseni  
man the stole fish  
'The man stole the fish'

ediei ne do eseni a  
man the stole fish ques  
'Did the man steal the fish ?'

## 5.9 CLITICS

In the previous section, it was stated that particles and clitics often function as demarcative syntagmatic features marking a unit as different from other units as the same rank. Mention has already been made of particles (page 35). A clitic is a morpheme which grammatically is relevant to a unit as a whole, but phonologically is bound to some part of it. For example, consider the two phrases the King of England's crown and the man in the grey suit's hat. The morpheme -s indicating possession is relevant to the whole of the preceding phrase, yet is clearly bound phonologically to the preceding word, as it changes from voiced to voiceless depending on the final phoneme in the preceding word.

Clitics are not written as separate words. They are either joined to the adjacent word, or linked to it by a hyphen, or an apostrophe (as in the English possessive).

In the following data from Tlingit - Alaska, nos. 1-6 illustrate the clitics -t 'to, as far as', -dei 'to, towards,' and -gaa 'for, to obtain'. Notice how they are phonologically bound to the preceding word, as they are either a non-syllabic consonant (i.e. t) or their tone is determined by the preceding tone (L following H, H following M). But they are grammatically relevant to the whole phrase and not just to the word they are bound to.

1. <u>ax</u> hídee-t            oowagút my house-poss-to he went	'He went to (and arrived at) my house'
2. <u>ax</u> hídee            tlén-t cowagút my house-poss big-to he-went	'He went to my big house'
3. <u>ax</u> hídee-déi        woogdot my house-poss-to he-went	'He went to (towards) my house'
4. <u>ax</u> hídee            tlén-déi woogdot my house-poss big-to he-went	'He went to my big house'
5. doo àat-gáa woogdot his aunt-for he-went	'He went for (to fetch) his aunt'
6. doo àat hás-gàa woogdot his aunt pl.-for he-went	'He went to fetch his aunts'

In nos. 7-10 from the same language, notice that the tone of the morphemes nák 'without' and téen 'with' remains constant. This shows that they are not phonologically bound to the preceding word. They are therefore particles, and not clitics.

7. <u>ax</u> àat nák <u>ax</u> hídee-déi woogdot my aunt without my house-to he-went	'He went to my house without my aunt'
8. doo àat hás nák        woogdot his aunt pl. without he-went	'He went without his aunts'
9. tléil doo àat téen woogdot neg. his aunt with he-went	'He didn't go with his aunt'
10. doo àat hás téen woo.àat his 'aunt' pl. with they-went	'He went with his aunts'

1. Cayna runa iscay huagra chipi huañuchi-mi  
yesterday man two cow there killed-witnessed 'Yesterday the man killed two cows there'
2. Cayna huagra chipi huañuchi-si  
yesterday cow there killed-not-witnessed 'Yesterday he killed a cow there'
3. Chipi runa-mi huañuchi  
there man-witnessed killed 'The man killed it there'
4. Huamra chipi suj cuchi-si huañuchi  
boy there one pig-not-witnessed killed 'The boy killed one pig there'
5. Huamra cuchi cayna-si huañuchi  
boy pig yesterday-not-witnessed killed 'The boy killed a pig yesterday'
6. Cayna iscay cuchi chipi-mi huañuchi  
yesterday two pig there-witnessed killed 'Yesterday he killed two pigs there'
7. Huañuchi-si  
killed-not-witnessed 'He killed it'

#### B. Dubitative modification

The following examples from Tlingit - Alaska show how particles may be used to express degrees of doubt or of certainty. Since these particles can occur in any clause type, and at virtually any point in the clause (i.e. following almost any phrase) they are best described by a statement of modification. In the examples given, they are shown modifying the transitive, intransitive, impersonal, stative, nominal and locative clauses respectively.

1. xóots shakdé saxwaa.áx dzeeyáak 'Maybe I heard a brown-bear voice-I-heard earlier-on brown bear earlier.on'
2. Juneau-dé kwashé kukgwaatèen  
he-will-take-a-trip 'Perhaps he's going to Juneau on a trip'
3. kúnax kusi.áat' xáa  
really it-is-cold 'It's sure cold'
4. tlax a yáanax ee wdixwétl kwshé  
it face-beyond you is-tired 'Maybe you're too tired'
5. ee xóonee kwshé  
your friend 'Maybe it's your friend'
6. aatlèin dáanaa xáa doo jèewoo  
lots money his hand-loc. 'He sure has lots of money'

#### C. Negation modification

Negation is another category that can often be handled as a modification of the types of the unit where it occurs. Most frequently negation occurs at clause and/or phrase rank. In the Mbembe - Nigeria data given below it will be seen that the clause structures are :

## SUMMARY

In analysing clauses, different types are set up when there are differences in basic structure i.e. in the elements and syntagmatic features (order, status of elements etc.). Differences in clause structure are analysed as modification of basic types when they occur with a number of basic types. If they occur with only clause type, it is generally preferable to set up an additional type.

### 5.11 DISTINCTION BETWEEN NUCLEUS AND PERIPHERY

In order to avoid repetition in describing structures which are similar in certain parts, one can sometimes divide the structures into nucleus and periphery. The peripheral part is the part which is the same in all the structures, and the nucleus is the part which differs. This division into nucleus and periphery also helps display the relationships of the various elements to each other and to the whole more clearly.

At clause rank it is often useful to divide structures into nucleus and periphery (sometimes called 'margin'), the VP, NPs and NPs forming the nucleus, as they are the part of the clause which contains the differences on which clause types are based, and are often linked by features of cross reference.

In the following data from Mambila - Nigeria, active clauses may be divided : transitive (1-5), intransitive (6-9), ditransitive (10-13).

1. nòr búda leh gwulla nagup ahehne à tan 'That man sold his cow  
man that past sell cow his at market in the market'
2. nòr leh gwulla nagup éh mun ahehne à le lehre  
man past sell cow with child of-his at village yesterday  
'Yesterday the man sold the cow with her calf in town'
3. nòr leh kua nagup bò à ten chir kwar kwar 'The man drove the  
man past drive cow plu. at there road quickly cows quickly down  
the road'
4. nòr ba gwulla bil ahehne hohm 'The man is selling his  
man cont.sell goat of-his well goat for a good price'
5. chia chéhn deh nòr leh gwulla bil éh mun hohm seh  
day one certain man past sold goat with child good very  
'One day the man sold a goat with a kid very well'
6. nòr leh nda à tan 'The man went to the  
man past go to market market'
7. ve leh nda éh soo ahehne à tan menjoo búnu 'The woman went  
woman go with basket of-her morning this with her basket  
to the market this morning'
8. ve leh nda éh bur ahehne à le ter ter 'The woman went with  
woman go with dog of-her slowly her dog slowly to the  
village'

At word rank it may be useful to describe a verb in terms of nucleus and periphery, if the differences on which the verb types are based occur in only one part of the verb word. For example in Nasioi - Papua New Guinea there are three types of verbs : transitive, intransitive and speech which occur with different subject person markers, but the same dual number marker, negative and tense marker occur with all types of verb. If the structure of each type were described in the normal way, this would result :

verb type 1 --  $Vrt_1 + obj(\text{dir/indir}) + subj_1$  (dual) (neg) (past)  
 verb type 2 --  $Vrt_2 + subj_2$  (dual) (neg) (past)  
 verb type 3 --  $Vrt_3 + subj_3$  (dual) (neg) (past)

It is obvious that such a description of the verb types is very repetitious.

So now we will divide the verb into the nucleus and periphery. The nucleus will need to be described separately for each type because it contains the differences on which the type is based. So it must include the verb root, object and subject (the latter because of the different sets of subject suffixes).

So the revised description of the verb is Nasioi is as follows :

There are 3 types of verb : transitive, intransitive, speech.  
 They are described in terms of nucleus and periphery.

#### The Nuclei

Type 1 transitive	: + $Vrt_1 + obj + subj_1$
Type 2 intransitive	: + $Vrt_2 + subj_2$
Type 3 speech	: + $Vrt_3 + subj_3$

#### The Periphery

The (postnuclear) periphery is the same for each verb type :  
 (dual) (neg) (past tense)

## CHAPTER 6

## SENTENCE ANALYSIS

6.1 - SENTENCE STRUCTURE AND TYPES

The structure of the sentence is described in terms of the elements (clauses) and syntagmatic features. These include the order, status and relationship of the elements in the sentence and also any demarcative features. Various sentence types are set up using the criteria already described for setting up types of linguistic units. It is frequently advantageous to establish a limited number of basic sentence types and to make statements of modifications that can be applied to them (see section 6.4).

The primary division of sentences is usually into simple and complex.

A. Simple sentences : these consist of a single clause as the only element, often with a syntagmatic feature of intonation. There may also be other demarcative features, such as particles functioning as sentence introducers.

B. Complex sentences : these consist of two or more clauses as elements with various syntagmatic features showing the relationship between the clauses. Complex sentences are often further subdivided into coordinative and subordinative sentences. However, this division does not prove useful in every language.

i) Co-ordinative sentences : these consist of two or more clauses considered to be of equal status in the sentence. Such clauses usually have the same structure as they would have when occurring as separate simple sentences and are linked by some kind of conjunction.

Sometimes the relationship is marked by pitch features or by parallel tense changes in both clauses, showing them to be elements in a coordinate construction.

In English coordination is marked by conjunctions, as for examples :

He enjoys a game of tennis but his wife has always made swimming her chief summer relaxation.

At the sound of the explosion Dick ran to the window and Betty dashed upstairs to reassure the children.

ii) Subordinative sentences : these consist of two or more clauses, one of which is nuclear to the sentence, all other clauses in the sentence being in a subordinative relationship to this one. The nuclear (main) clause will usually have the same structure as it would have when occurring as a simple sentence, while the subordinate clauses will differ in form from their 'independent' form. Frequently the main grammatical signal of subordination is the occurrence of a different form of the verb in the VP of the subordinate clause.

4. wen ótè ekon  
boy he-takes gun  
'The boy takes his gun.'

5. ófì epu  
he-kills monkey  
'He kills the monkey.'

6. odem ótè epu  
man he-takes monkey  
'The man takes the monkey.'

7. yákìlì ẹtò  
they-go house  
'They go to the house.'

8. wen óbèlì epu  
boy he-cuts-up monkey  
'They boy cuts up the monkey.'

9. odem nà ɔnɔn ẹtèn  
man fut. he-cook meat  
'The man will cook the meat.'

10. odem ódè wen ẹdò  
man he-calls boy and-then  
wen ótè ekon  
boy he-takes gun  
'The man calls the boy and then the boy takes his gun.'

11. odem ótè epu ẹdò  
man he-takes monkey and-then  
yákìlì ẹtò  
they-go house  
'The man takes the monkey and then they go to the house.'

12. wen óbèlì epu ẹdò  
boy he-cuts monkey and-then  
odem nà ɔnɔn ẹtèn  
man fut. he-cook meat  
'The boy cuts up the monkey and then the man will cook the meat.'

13. odem ɔbákìlì likol  
man when-he-goes bush  
óké epu  
he-sees monkey  
'When the man goes to the bush he sees a monkey.'

14. ódòkè epu ódè wen  
when-he-sees monkey he-calls boy  
'When he sees a monkey he calls a boy.'

15. wen óbtè ekon ófì  
boy when-he-takes gun he-kills  
epu  
monkey  
'When the boy takes his gun he kills the monkey.'

16. yákìlì ẹtò wen  
when-they-go house boy  
óbèlì epu  
he-cuts-up monkey  
'When they go to the house the boy cuts up the monkey.'

From the above data it can be seen:

- a) the co-ordinate relationship between clauses is marked by the conjunction and
- b) the subordinate relationship is marked in the VP of the subordinate

The sequence of descriptive tense followed by future marks another type of temporal sentence with the meaning 'if/when'.

• tani eki • si du : eseni      'if/when he goes to market he will buy fish'

b) Phonological features

Many languages have complex sentences consisting of a series of simple clauses which are juxtaposed (put next to each other) without any conjunction or other grammatical linkage. It is the phonological features (e.g. intonation, downdrift of pitch in a tone language, general speed) which link the clauses together. Clauses which are juxtaposed are frequently in a sequential relationship, but juxtaposition may also indicate other relationships (e.g. antithesis, apposition etc.).

Study the examples below.

### Guayaboro (Colombia)

'I left the house, but, as there was a tiger on the trail, I didn't go, and so returned home.'

'I left the house / there was a tiger on the trail / I didn't go /  
I returned to the house'

### Tlingit (Alaska)

Short clauses with a close semantic tie are frequently linked by being spanned by one gradual downdrift of pitch and ritardando (slowing down):

a wdig̣aan / tlax aak'é kuk'é  
it was-shining very fine weather

'The sun was shining; it was certainly fine weather.'

### 6.3 COMMON SENTENCE TYPES

Just as we found that there are a number of clause types which are commonly found in languages, so there are certain sentence types which occur frequently.

Examples of the most frequent types will be found below. Note especially that although at sentence rank the labels of types tend to reflect semantic relationships, sentence types must be distinguished on grammatical grounds, i.e. the type of clauses which occur and the way the relationships between the clauses are marked grammatically by intonation patterns, selection of tense forms, use of particles etc.

Some labels which are commonly used for sentence types are given below together with the English conjunctions which indicate the relationships involved:

**COORDINATIVE** and Bill plays the piano and he's learning the flute.

**ANTITHETICAL**      but      Bill plays the piano but he wants to play the flute.

ALTERNATIVE (either)...or Bill must have flute lessons or he'll be (neither)...nor very unhappy.

3. umana-wahm oyahw kah friend-my is there  
'My friend is there.'

4. umana-wahm oyahw kah-o 'Is my friend there?'

In the Bimoba data below, the simple statement sentence consists of a clause plus falling intonation. In the case of polar questions, the modification of this basic sentence type consists of the occurrence of the clitic -a suffixed to the final word in the sentence and the substitution of a rising intonation for the falling intonation. Content questions are marked by a different modification : the substitution of a question word for the relevant phrase and a level intonation in place of the falling intonation.

Illustrative data Bimoba - Ghana

1. a naapoo daa jeet daak ni your wife bought food market in	'Your wife bought food in the market' (falling intonation)
2. a bik na la jeet le your child the saw food where	'Where did your child see food?' (level intonation)
3. a daa jeeta you bought food-?	'Did you buy food?' (rising intonation)
4. n bik koi ti naab my child sold our cow	'My child sold our cow.' (falling intonation)
5. a sa koi be daak ni you will sell what market in	'What will you sell in the market?' (level intonation)
6. a baa koi na naab daak nia your father sold the cow market in-?	'Did your father sell the cow in the market?' (rising intonation)

B. Imperative modification: The most common modifications for the imperative are:

i) deletion of the NPs, or occurrence of pronoun only as NPs.  
ii) changes in the verb (or in the VP)

In the Mambila - Nigeria data given below, the modification for the imperative consists of the deletion of the NPs and a change in the tone of the verb, viz. verbs with tone 2 or 2 1 change to 1  
verbs with tone 3 or 3 4 change to 4

Note: tone 4 is the lowest tone

1. meh <sup>4</sup> hen <sup>2</sup> chik <sup>4</sup> I see cloth	'I see cloth'
2. hen <sup>1</sup> chik <sup>4</sup> see cloth	'See cloth!'
3. meh <sup>4</sup> gwulla <sup>3</sup> chik <sup>4</sup> I buy cloth	'I buy cloth'
4. gwulla <sup>4</sup> chik <sup>4</sup> buy cloth	'Buy cloth!'
5. meh giun <sup>34</sup> chik I want cloth	'I want cloth'
6. giun <sup>4</sup> chik <sup>4</sup> want cloth	'Want cloth!'

In some instances there is a high correlation between the classes of sentence and the types of sentence. For instance, all Imperative sentences may have similar structures (which may often be described conveniently as modifications of basic sentence types all of which function in the Statement class of sentences). On the other hand, other classes of sentence e.g. Initiating sentences, may have a variety of structures and cannot be so simply correlated with a particular sentence type or modificatory statement.

As with units at other ranks, the classes of sentences cannot usually be matched with the types of sentence on a one for one basis though there are frequently correlations and restrictions between the classes and the types.

## CHAPTER 7

## RANKSHIFTING

7.1 SECONDARY FUNCTION OF A UNIT

It has been seen that linguistic units normally function as elements of another unit at the next higher rank in the hierarchy. Such function is termed the primary function of the unit. In many instances, however, linguistic units also function as elements of other units at either a lower rank in the hierarchy or at the same rank. Such units are termed rankshifted. (Other terms sometimes used are 'embedded' or 'included' or 'downgraded').

Rankshifting involves a mismatch between form (or structure) and function of a unit. Either a unit of a particular structure does not function at the normal rank (e.g. a clause functions at phrase rank instead of at sentence rank) or, alternatively, a unit functioning at a place in a structure at a certain rank does not have a form that is associated with that place in the structure (e.g. one of the modifiers of an NP is a clause instead of a word).

At times it is difficult to recognise when a unit is rankshifted. No formal discovery procedures can be given. When you come across a stretch of data which you know to be a complete unit (like a clause or a phrase) functioning in an unusual place (i.e. at the 'wrong' rank) you can suspect it has been rankshifted from somewhere else in the hierarchy.

One of the units most frequently rankshifted is the clause. It may function either as an element of the phrase (i.e. as an element of a unit at a lower rank) or as an element of the clause (i.e. as an element of a unit at its own rank). The symbol for a rankshifted clause is rsCl.

7.2 RANKSHIFTED CLAUSE AS MODIFIER IN THE NP

In many languages relative clauses are one of the most common rankshifted elements. A relative clause is one which is functioning as modifier in the NP. Compare for example, 'The naughty boy was punished' and 'The boy who bit his sister was punished'. It can be seen that the rsCl is functioning in place of a word. In English the special characteristic of the relative clause is that the Object or Subject NP is replaced by a relative pronoun (who, which, that) which refers to the noun being modified. The remainder of the rsCl has the same structure as an independent clause - compare 'who bit his sister' and 'the boy bit his sister'.

When a unit is rankshifted there are frequently special markers, and there may also be restrictions on its structure. In the following data from Kon-komba - Ghana, the rsCl has two markers: n occurring following the NPs and na occurring in clause final position. In this data there is a restriction on the structure of the clause, viz. the NPs is always a pronoun.

In the Paumari - Brazil data below, the rsCl is functioning as object in the main clause and is marked by the normal object marker (see nos. 5,6, 8,10). There is no change in the structure of the rsCl.

1. 'ojoina  
I-return
2. 'i'omani  
you-lie-down
3. ihai-ra 'inofimania  
medicine-obj. you-want?  
'Do you want medicine?'
4. sipatihi-ra 'inofimania  
bananas-obj you-want?  
'Do you want bananas?'
5. 'i'omani-ra 'inofimania  
you-lie-down-obj. you-want?  
'Do you want to lie down?'
6. 'ojoina-ra 'onofivini  
I-return-obj. I-want  
'I want to return'
7. sipatihi-ra 'ihaki  
bananas-obj. you-eat  
'You eat bananas'
8. sipatihi-ra 'ihaki-ra 'inofimania  
bananas-obj you-eat-obj. you-want?  
'Do you want to eat bananas?'
9. 'ogorana-ra 'onajahavini  
my-house-obj. I-cause-to-make-clean  
'I clean my house'
10. 'ogorana-ra 'onajahavini-ra  
my-house-obj. I-cause-to-make-clean-obj.  
'onofivini  
I-want  
'I want to clean my house'

In the following data from Kaiwa - Brazil it will be seen that the rsCl is identical in structure with the independent clause. This frequently happens with verbs of perception, e.g. see, hear, realise etc. Compare English: 'I understand John is earning a lot of money' 'I see Mary has gone home already'.

#### Illustrative data from Kaiwa - Brazil

1. ahefa kuña  
I-see a-woman
2. kuña ogweraha pira  
a-woman is-carrying fish
3. ahefa kuña ogweraha pira  
I-see a-woman carrying fish
4. ndoikwaai Pedro  
he-didn't-know Pedro
5. mba'epa ojehu  
what happened?
6. ndoikwaai mba'epa ojehu  
he-didn't-know what happened

When the rsCl is functioning as the Purpose Phrase (nos. 7-12) the head of the VP bears the suffix -hanwa.

Lalana Chinantec: ro? dzun kjen fii? lii?n  
 horse good of boy good-looking  
 'The good-looking boy's horse'

But in Basari, a noun class language of Ghana, the rankshifted construction is marked by the transference of the prefix of the head of the phrase to become its suffix. Thus the rsNP itself does not bear any marker.

1. uboti	'chief'
2. uninja bɔtiu	'man's chief'
3. unimpu	'wife'
4. uninja nimpuu	'a man's wife'
5. unimpu ubɔ	'one wife'
6. uninja-nee nimpuu ubɔ	'this man's one wife'
7. kusaau	'farm'
8. kusaau kubɔ	'one farm'
9. uninja saaku	'a man's farm'

#### B. Prepositional Phrases

Compare the structure of the locative and nominal phrases in the following sentences:

She went to the big white house.

The big white house burnt down.

It will be seen that the structure of the NP and LP is the same apart from the initial preposition. So the most economical description of the LP is preposition followed by rsNP. In many languages adverbial phrases can be analysed in this way. Consider a further example from Mambila - Nigeria.

mel dua	'a big farm'	à mel-e dua	'at a big farm'
farm big			
cir a mo	'my path'	à cir-e mo a	'on my path'
path poss my			

We see that the LP can be described as preposition followed by rsNP. When the NP is rankshifted, the head of the NP bears the suffix -e. In addition, the possessive marker occurs clause finally.

A construction such as the Mambila LP may be termed a relator-axis construction, the relator being the preposition and the axis being the rsNP. This is not a Head-Attributive construction as both elements are obligatory.

Another term, which is used for any construction with two obligatory items, is exocentric. Exocentric contrasts with endocentric which is used for a construction with only one obligatory element (i.e. if a construction at any rank is functionally equivalent to one of its component elements, it is endocentric, if not it is exocentric). All constructions are either exocentric or endocentric. For further explanation of these terms see Robins: General Linguistics pp 234-7.

## CHAPTER 8

## SUB-RANKS

So far, we have seen that all units at a given rank function as elements in the next rank above. But sometimes additional groupings are needed because of relationships between some (but not all) of the units at a given rank. For example, two or more verbs may function together as a group and the attributives in the VP relate to this group as a unit. In such a case it is useful to set up a sub-rank between the phrase and the clause for the VP only. The advantage of setting up a sub-rank is that only the unit concerned passes through it in ascending the hierarchy. If a full rank is set up, then all units have to pass through it, and this is clearly redundant in such circumstances.

8.1 SUB-RANK IN PHRASES - COMPOUND HEAD OF PHRASE

In some languages, a sub-rank needs to be set up between phrase and word rank. Such a word group will function as the compound head of the phrase.

The Engenni data below gives an example of a compound head of the VP. In nos. 1-6 it will be seen that the basic tone pattern is spread over both verbs in the compound head. In nos. 7-10 the completive suffix -ni occurs only with the second verb, but it modifies both verbs. Both these features illustrate that the two verbs are functioning as one unit.

1. (Simple)	ó      sisè      ákl	'She will put the pot down'
	she put-down      pot	
2. (Compound)	ó shé      sisè      ákl	'She will take the pot off and put it down'
3. (Simple)	ó      shirè	'She should run'
4. (Compound)	ó      shirè      tà	'She should run there' (lit: she should run go)
5. (Simple)	ó      dírè      ésènl	'She cooks fish'
	she cook fish	
6. (Compound)	ó      dírè      di      ésènl	'She cooks and eats the fish'
7. (Simple)	ó      she-ni      aki	'She has taken the pot off'
8. (Compound)	ó      she      sise-ni      aki	'She has taken the pot off and put it down'
9. (Simple)	ó      dire-ni      eseni	'She has cooked the fish'
10. (Compound)	ó      dire      di-ni      eseni	'She has cooked and eaten the fish'

A sub-rank has also been set up in the NP in Engenni. Two nouns may function together as a compound head of the phrase. The relationship between the two nouns is marked by the feature of high tone on the second noun. The modifier modifies the whole compound head, and not just the immediately preceding noun.

Complex Clause (auxiliary verb underlined)

(a) Showing preverbal particle in either clause

1. kaani wum wu paali / o magi-u } 'The woman did not  
woman the not deliberate she hit-him' }  
2. kaani wum paali / o wu magi-u } deliberately hit him'  
woman the deliberate she not hit-him }  
3. kaani wum daa ta wu joohri / o magi-u } 'The woman has not  
woman the again still not return she hit-him' }  
4. kaani wum joohri / o daa ta wu magi-u } yet hit him again'  
woman the return she again still not hit-him }

Similarly, the negative/tense marker, sentence connectors, and also the NPo may occur in either clause.

(b) Showing negative/tense marker functioning in either clause

1. o pangi / o bi veh skuli } 'He doesn't even  
he even he not go school' }  
2. o bi pangi / o veh skuli } go to school'  
he not even he go school }

(c) Showing S.F. of sentence ma functioning in either clause

1. kaani wum ma siihni / o magi-u } 'The woman actually  
woman the then actually she hit-him' }  
2. kaani wum siihni / o ma magi-u } hit him'  
woman the actually she then hit-him }

(d) Showing NPo in either clause

1. o wú wani pia / o saja } 'She will be able  
she fut. able yams she cook' } to cook yams'  
2. o wú wani / o saja pia }  
she fut. able she cook yams }

In the sentence below it will be seen how the complex clause forms a unit, parallel to the other simple clauses, all of which function as elements of the sentence.

o na yih sonjo tu mu o twi kaani wum  
he when reached house when focus he insulted woman the  
pa o paali o magi-u  
so-that she deliberate she hit-him

'When he reached the house, he insulted the woman, so she hit him.'

8.3 SUB-RANK IN WORDS - STEMS

In describing the structure of each word class, it often proves necessary to distinguish between the nuclear part of the word which has a variety of internal structure (e.g. root, root + root + affix) and the affixes which relate to the whole of the nucleus. Therefore the sub-rank 'stem' is introduced between the word and morpheme ranks. The stem is defined as a nuclear form consisting of one or more morphemes which may be further affixed.

A word or a stem produced by a class-changing affix is of a different functional class from the form from which it was derived, but it functions in the same way in the hierarchy as a word in its class which has simpler internal structure. For example, boy (simple noun root), departure (verb root + derivational affix), displeasure (derivational prefix + verb root + derivational suffix), realism (adjective root + derivational affix) all have different internal structures but the same possibility of external function.

Derivational affixes tend to occur in layered constructions, that is, to be applied to the stem in a specific operational order. For example, hospital, hospitalize and hospitalization but never hospitalation; fortune, fortunate, unfortunate, but never unfortunate. Inflectional affixes, by contrast, cannot usually be considered as having a particular order of application; there tends to be greater independence and variation of co-occurrence. For example, in a Turkish form such as *t̪alı-ma-adzak-lar* (work-neg-fut-pl) 'they will not work' it is not possible to say that any one suffix is of a higher layer than any other, since any one may be removed or retained independently of the others.

Examples of class-maintaining derivational affixes in English

NOUNS	pig-let	boy-hood	pre-view	friend-ship
	prince-ling			
VERBS	re-form	pre-determine	de-compose	dis-approve
ADJECTIVES	in-tolerant	good-ly		

Examples of class-changing derivational affixes in English

(see C. Fries, STRUCTURE OF ENGLISH, pp. 113-116, 123-124, 126-130, 133-134)

1. Those which change verbs to nouns

arrive	arriv-al	deform	deform-ity
depart	depart-ure	break	break-age
deliver	deliver-y	defend	defen-ce (note loss of 'd')
accept	accept-ance	help	help-er
achieve	achieve-ment	decide	decision (note stem change)
assist	assist-ant		

2. Those which change adjectives to nouns

big	big-ness	warm	warm-th
ideal	ideal-ism	equal	equal-ity (note change of stress)

3. Those which change nouns to verbs

friend	be-friend	glory	glori-fy
power	em-power	house	house (/ha <sup>u</sup> s/ and /ha <sup>u</sup> z/) (and similarly proof, prove, etc.)

4. Those which change adjectives to verbs

bright	bright-en	equal	equal-ise
large	en-large		

13. pū	'to write'	16. ɳwa jyiu	'I'm going!', 'I will go'
14. pūdwu	'pencil'	17. ɳwa jyia	'I went'
15. pūswu	'writer'	18. jyio	'Let's go!'
	derivational		inflectional
-d-	'instrument'		-a 'past'
-g-	'location'		-o 'hortative (suggestion)'
-s-	'person'		-u 'non-past'
-wu	'nominaliser'		

In conclusion, an analysis of the following data from Inga - Colombia will show how the description of the word structure is greatly simplified by setting up a sub-rank for stem.

Notes: -rca is past tense marker; there is no overt marker for 3rd person subject in the verb.

1. atahualpata cahuarca hen (object) he-saw	'He saw the hen'
2. atahualpacunata huañuchirca hens (object) he-killed	'He killed the hens'
3. atahualpa micuyta micucurca hen food (0) was-eating	'The hen was eating the food'
4. atahualpacuna huañurca hens died	'The hens died'
5. runata suma huasita cahuachirca man (0) beautiful house(0) showed	'He showed the man the beautiful house'
6. huasichicurca	'He was house-building'
7. runacunata ambirca men (0) cured	'He cured the men'
8. runacuna rupa ambiycunata upiarca men hot medicines(0) drank	'The men drank the hot medicines'
9. ambiy rupayacurca medicine was-heating	'The medicine was heating'

In the description below, the following points should be noted:

- For each unit the function is described first, then the structure.
- In describing stems, the specific root class that may occur is given.
- Roots are classified according to the stems in which they function.
- Adj. roots do not have to pass through the stem sub-rank.

### The Word

Three classes of word are set up on the basis of their function as elements of the phrase.

The Verb functions as the head of the VP

V → V stem (Cont.) + Tense

## CHAPTER 9

ALLOMORPHS

In the previous discussion on morphemes (chapter 2) it was assumed that a morpheme appears in the same form in every environment, but this is not necessarily the case, e.g. English plural suffix in cat-s, dog-s [-z], church-es, ox-en, etc. Although the form is different, the meaning is the same. In addition, the particular forms never occur with the same root, that is are mutually exclusive. These forms are termed allomorphs.

A morpheme may therefore be a single form or a group of allomorphs. To be assigned to a single morpheme, allomorphs must have the same meaning and occur in complementary distribution. The distribution of the allomorphs may be morphologically or phonologically conditioned.

9.1 MORPHOLOGICAL CONDITIONING OF ALLOMORPHS AND CLASSIFICATION OF STEMS

The data from Bariba - Republic of Benin illustrates allomorphs whose occurrence is determined (or conditioned) by the stems they occur with (i.e. their morphological environment). Hence such allomorphs are known as morphologically conditioned allomorphs. A special symbol indicates that allomorphs are morphologically conditioned:  $\approx$ . In this data certain nouns take the plural allomorph -ba, others take -bu and others take -su.

1. akparaba	'bottle'	akparababa	'bottles'
2. kurcsø	'pig'	kurcsøsu	'pigs'
3. swaa	'ear'	swaasu	'ears'
4. kurø	'wife'	kurøbu	'wives'
5. gambo	'door'	gamboba	'doors'
6. baro	'sick man'	barobu	'sick men'
7. gambaru	'Hausa man'	gambarusu	'Hausa men'

As the allomorphs are morphologically conditioned, their distribution can be described only by listing the forms they occur with. While working on the analysis of the language, the analyst would keep record of which stems occurred with which allomorphs. The stems can thus be grouped into classes according to their occurrence with one allomorph or another. Ultimately, the class membership would be shown in the dictionary. For this Bariba data we can set up three classes: 1, 2 and 3 occurring with -su, -ba and -bu respectively. The dictionary entry for a noun would include an indication of which class it belonged to.

Description of the grammar would be as follows:

The Noun Stem

There are three classes of noun stems, set up on the basis of their function with the allomorphs of the plural suffix  $\{\text{-su}\}$ .

14. ruyubibe	'he looks for'	21. kareebe	'he is going out'
15. zuyubibe	'he will look for'	22. ribanibe	'he wakes up'
16. biyubibe	'he looked for'	23. zabanibe	'he will wake up'
17. kuyubibe	'he is looking for'	24. bibanibe	'he woke up'
18. rireebe	'he goes out'	25. kabanibe	'he is waking up'
19. zareebe	'he will go out'	26. kabanidu	'we are waking up'
20. bireebe	'he went out'		

When the basis for classifying stems involves more than one set of allomorphs, it is helpful to set up a chart to determine the class membership of the stems. The chart has the allomorphs across the top and the stems down the side, and the occurrence of each allomorph is marked.

	ku-	ka-	ru-	ri-	zu-	za-
-kaa-	✓		✓		✓	
-zooñe-	✓		✓		✓	
-dzela-		✓		✓		✓
-yubi-	✓		✓		✓	
-ree-		✓		✓		✓
-bani-	✓			✓		✓

When the chart is examined, it is seen that the stems can be divided into two classes according to the combination of allomorphs they take. A full description of the verb stem and verb prefixes would be as follows:

#### The Verb Stem

There are two classes of verb stem set up on the basis of their function with the following prefixes, which have allomorphs: {ku-} 'present continuous', {ru-} 'present' and {zu-} 'future'.

Class 1 occurs with ku- 'pres. cont', ru- 'pres' and zu- 'fut'

e.g. -kaa- 'write'  
 -yubi- 'look for'

Class 2 occurs with ka- 'pres. cont', ri- 'pres' and za- 'fut'

e.g. -bani- 'wake up'  
 -ree- 'go out'

#### The Verb Prefixes

{ku-}	ku- ~ ka-	'present continuous'
	ku-	occurs with verb stem class 1
	ka-	occurs with verb stem class 2
{ru-}	ru- ~ ri-	'present'
	ru-	occurs with verb stem class 1
	ri-	occurs with verb stem class 2
{zu-}	zu- ~ za-	'future'
	zu-	occurs with verb stem class 1
	za-	occurs with verb stem class 2

5. The general terms are chosen so that they only make distinctions where they are needed. Thus the term bilabial plosives is only used when there is a need to distinguish it from bilabial non-plosives.

Note:

Phonologically conditioned allomorphs should not be confused with allophones. With phonologically conditioned allomorphs, the variation occurs between full phonemes which contrast with each other and are not in complementary distribution. (For example English: illogical, impossible, indescribable, incomplete).

The following are the steps to take in identifying phonological conditioning.

1. Get data arranged properly: i.e. list each allomorph together with the items with which it occurs.
2. Assess the nature of the phonological difference between the allomorphs.
3. Examine items in each list to detect any likely cause of phonological differences between the allomorphs.
4. If similarities between items lead to plausible (likely) statements of conditioning, regard conditioning as phonological. If no such statements can be made, regard conditioning as morphological.

A further example of phonologically conditioned allomorphs is seen in the data from Turkish below.

		<u>plural</u>	<u>'your' +sg.noun</u>	<u>'your' +pl.noun</u>		
1.	mum	'candle'	mumlar	mumun		
2.	kibrit	'match'	kibritler	kibritin		
3.	yzym	'grape'	yzymler	yzymyn		
4.	sınıf	'class'	sınıflar	sınıfin		
5.	ders	'lesson'	dersler	dersin		
6.	satʃ	'hair'	satʃlar	satʃin		
7.	göz	'eye'	gözler	gözyn		
8.	top	'gun'	toplar	topun		
9.	kuş	'bird'	kuşlar	kuşun		
10.	dış	'tooth'	dışler	dışin		
11.	ok	'arrow'	oklar	okun		
12.	kök	'root'	köklər	kökyn		
{-lar}		-lar ~ -ler	'plural'			
{-ler}		-ler occurs following roots with front vowel				
{-lar}		-lar occurs elsewhere				
{-un}		-un ~ -in ~ -yn ~ -in	'2nd person singular'			
{-in}		-in occurs following a morpheme with front unrounded vowels				
{-yn}		-yn occurs following a morpheme with front rounded vowels				
{-in}		-in occurs following a morpheme with non-front unrounded vowels				
{-un}		-un occurs elsewhere				

### The Noun Suffix

{-z} (-z ~ -iz ~ -s) ~ -ən ~ zero 'plural'

(-z ~ -iz ~ -s) occurs with stem class 1 as follows:

-iz occurs after sibilants

-s occurs after voiceless non-sibilants

-z occurs elsewhere

-ən occurs with stem class 2

zero occurs with stem class 3

Note: the reason that -z was chosen as the representative allomorph was that together with its phonologically related allomorphs it occurs with the greatest number of noun roots, and because within the group of phonologically conditioned allomorphs it occurs in the greatest number of different phonological environments.

### 9.5 ALLOMORPHS OF STEMS

In some languages there are allomorphs not only of affixes, but of stems also. The data below from Isthmus Zapotec - Mexico illustrates allomorphs of stems and affixes.

1. kuba	'corn dough'	/kubabe	'his corn dough'
2. lu <sup>?</sup> una?	'bed'	hlu <sup>?</sup> unabe	'his bed'
3. neza	'road'	hnezabe	'his road'
4. manf?	'horse'	hmanfibe	'his horse'
5. da <sup>?</sup> a	'mat'	/ta <sup>?</sup> abe	'his mat'
6. geta	'tortilla'	/ketabe	'his tortilla'
7. ba <sup>?</sup> du?	'child'	/pa <sup>?</sup> dube	'his child'
		/pa <sup>?</sup> dudu	'our child'

When stems have allomorphs, a number of stems frequently undergo similar changes. Instead of describing the allomorphs of each stem individually, which would be very lengthy, a general statement about the phonological changes can be made which will cover a number of stems. The stem allomorphs in this data can be described by two statements:

1. Stem-initial voiced plosive is voiceless after prefix /-.

e.g. geta 'tortilla' /ketabe 'his tortilla'  
ba<sup>?</sup>du? 'child' /pa<sup>?</sup>dube 'his child'

2. Stem-final glottal is lost before a suffix.

e.g. lu<sup>?</sup>una? 'bed' hlu<sup>?</sup>unabe 'his bed'  
manf? 'horse' hmanfibe 'his horse'

These two statements together with the statement of the allomorphs of {h-} 'possessive',

i.e. {h-} h- ~ /-  
/- occurs before plosives  
h- occurs elsewhere

cover all the morphemes having allomorphs.

1. ait <sup>h</sup> iops	'Ethiopian'	ait <sup>h</sup> iopos	'of an Ethiopian'
2. p <sup>h</sup> leps	'vein'	p <sup>h</sup> lebos	'of a vein'
3. p <sup>h</sup> ulaks	'watchman'	p <sup>h</sup> lulakos	'of a watchman'
4. aiks	'goat'	aigos	'of a goat'
5. t <sup>h</sup> ε:s	'serf'	t <sup>h</sup> ε:tos	'of a serf'
6. elpis	'hope'	elpidos	'of hope'
7. orni:s	'bird'	orni:thos	'of a bird'
8. giga:s	'giant'	gigantos	'of a giant'
9. hri:s	'nose'	hri:nos	'of a nose'
10. ark <sup>h</sup> o:s	'ruler'	ark <sup>h</sup> ontos	'of a ruler'

The phonological changes can be described by three statements:

1. Stem-final voiced non-alveolar plosive is voiceless before suffix -s

e.g. aig-	aik-s	'goat'
p <sup>h</sup> leb-	p <sup>h</sup> lep-s	'vein'

2. Stem-final single alveolar is lost before suffix -s

e.g. elpid-	elpi-s	'hope'
the:t-	the:-s	'serf'

3. A sequence of two stem-final alveolars is lost before before suffix -s, with compensatory lengthening of the preceding vowel.

e.g. ark <sup>h</sup> ont-	ark <sup>h</sup> o:-s	'ruler'
gigant-	giga:-s	'giant'

### C. Metathesis

Two phonemes which may or may not be contiguous, change position,

e.g. - taj + pa > tapja ale + ra > arela

The following data from Zoque - Mexico illustrates the process of metathesis.

1. kenu	'he looked'
2. kenpa	'he looks, he will look'
3. kjenu	'he saw it'
4. kjenpa	'he sees it'
5. kjenhaju	'he saw it for him (on his behalf)'
6. kjenhapja	'he sees it for him (on his behalf)'
7. kento <sup>?</sup> ju	'he wanted to look'
8. kento <sup>?</sup> pja	'he wants to look'

When stem-final j is followed by p, metathesis takes place.

e.g. kento <sup>?</sup> j-	kento <sup>?</sup> pja	'he wants to look'
kjenhaj-	kjenhapja	'he sees it for him'

## CHAPTER 10

## WORD BOUNDARIES

10.1 THE WORD

Linguists have found that mother tongue speakers all over the world seem to recognise intuitively two grammatical units - the word and the sentence. While the number and nature of ranks in the grammatical hierarchy appear to vary a little from language to language, all languages appear to have ranks and units which correspond roughly to word and sentence.

In studying languages it is necessary to study both their phonological and grammatical structures. It is useful to set up separate hierarchies to assist us to understand and describe both the phonological and grammatical structures, i.e. a grammatical hierarchy and a phonological hierarchy. There are, in most languages, both many correlations between these hierarchies and many differences. The grammatical ranks and units are not always co-terminous with the phonological ranks and units. At the word rank, however, there are often very clear correlations. While, therefore, we set up a word rank and unit in the grammatical hierarchy, it is usually found that a similar rank and unit (often termed the phonological word) is needed in the phonological hierarchy.

Besides the grammatical word and the phonological word there is the orthographic word, i.e. the stretch of language it is conventional to write between spaces. Where there is an alphabet already in existence, it is generally true that the orthographic word reflects the speaker's intuitions about his language.

10.2 THE PROBLEM OF DECIDING WORD BOUNDARIES

Up to now word division has been taken for granted. The data has always been presented with the word breaks put in. But raw phonetic data does not come already divided up into words. We-hear-a-stream-of-uninterupted-speech-usually and not....one..word..after..another..each..neatly..divided..from..the..previous..word!

Before grammatical units can be described in terms of their function and structure, the boundaries of the unit have to be determined. We have already seen that this can be a difficult matter at phrase rank (e.g. deciding whether adverbial elements are part of the VP or separate phrases) and at morpheme rank (e.g. deciding where to make morpheme cuts when there are allomorphs of both stem and affix). There are often problems at word rank too in deciding where the boundaries of words are.

10.3 EXAMPLES OF PROBLEMS IN WORD BOUNDARIES

Siane - Papua New Guinea has vowel elision when two verbs are used in a close-knit phrase e.g. *dtō + áiyē* become *dtáiye* ('he takes' + 'come' = 'he brings it'). It is interesting to find that the Siane people will always write this as two words: *dtō áiyē*, but always find that difficult to read. They will read *dtáiye* easily, but then insist that it needs to be spelled the long way.

3. Occurrence of affixation If a group of morphemes occur with the same affixes as a single morpheme, then it is probable that the group is one word, e.g. English: wheelbarrow, hitchhiker can be affixed with plural -s only at the end, though they consist of more than one morpheme. Apinaye: any noun or modifier can take the suffix -re 'diminutive'. míturia 'mood' (from mít 'sun' and wriə 'side') can take it only finally, not medially, therefore is considered only one word.

4. Internal stability Within the word it is usual for the parts to occur in a fixed order. It is much less common for morphemes within a word to vary in order, than it is for words themselves to vary within the phrase or clause.

5. Non-interruptibility If a sequence of morphemes can be interrupted by a form which is already known to be a free word, then it is taken that that sequence is at least two words, e.g. Tlingit: yaandadashán can be interrupted by the free word has 'third plural' yaa has nadashán 'they are growing old' and therefore must be considered to have a word break (grammatically) between yaa and the remainder of the sequence.

6. Substitutability Most words have only one nucleus, and so only one morpheme that can be extensively substituted. If in a sequence of other morphemes only one morpheme can be substituted by a large number of other morphemes, the group is likely to be functioning as a single word, e.g. in the English word 'gladly' a large number of morphemes can be substituted for the first morpheme 'glad' but very few for the second 'ly'.

None of these criteria is sufficient on its own to determine word boundaries and sometimes these different criteria may conflict with each other so it is important to take them all into account when determining word boundaries.

#### 10.5 APPLICATION OF GRAMMATICAL CRITERIA IN DECIDING WORD BOUNDARIES

Illustrative data from Kaiwa - Brazil

1. <u>íwí</u> 'tuma	'The wind is already blowing' (lit. 'It's winding')
2. <u>íwí</u> 'tupo'rã	'Lovely wind!'
3. ipo'rã <u>íwí</u> 'tu	'The wind is lovely'
4. ipi'tãha'gwe	'Its feathers are red'
5. ha'gwepi'tãpo'rã	'Its feathers are a beautiful red'
6. iho'viha'gwe	'Its feathers are green'
7. ha'gweho'vi <u>po</u> 'rã	'Its feathers are a beautiful green'
8. ha'gwema	'It already has feathers' (lit. 'It's feathering')
9. ipo'rã <u>ha</u> 'gwe	'Its feathers are beautiful'

It can be seen that with the exception of the derivational affixes i- (which changes adjective roots into verbs), and -ma (which changes noun roots into verbs), all morphemes can occur in different places in the utterance, i.e. there is apparently no fixity of order, therefore these can be regarded as separate words. Phonological criteria coincide with grammatical. Stress occurs on the second or third syllable of each word. There is never any stress on i- or -ma, which supports the hypothesis that they are not words.

## CHAPTER 11

## ABOVE THE SENTENCE

11.1 RANKS ABOVE THE SENTENCE

The following are some of the ranks and units that are established above the sentence.

1. Discourse - often regarded as the largest verbal unit, functioning in an entirely non-verbal context. It may include one or more utterances (see below) united by some linking feature. Examples might be the conversation type discourse made up of initiating and response utterances or the monologue type, etc.

2. Utterance - this 'unit' may sometimes be defined by the change of speakers and by its distribution in the discourse. For example, the conversation type of discourse is composed of two or more utterances. There may be certain features as follows:

- a. Distinctive opening and closing markers.
- b. Dependent utterances may be less than complete clauses.
- c. There may be a characteristic use of pronouns.
- d. Questions and responses may be a particular type of dependent utterance.

Formal opening and closing markers of a narrative type of utterance might be 'I'm going to tell you about...', 'Once upon a time...' (a particular style of narrative). Closers might be 'That's all', 'They lived happily ever after'.

3. Narration - is sometimes described as a particular type of utterance which may or may not be formally marked.

4. Paragraph - the narration or utterance may perhaps be composed of one or more paragraphs. In Shipibo, the paragraph is marked by highly intricate ties between the person referent marker in succeeding sentences. Correct understanding of this feature is vital for translation.

In Kaiwa, the paragraph is introduced by a 'topic focus' marking usually a change of subject. The subject is then referred to implicitly or by pronouns within the paragraph. There are also grammatical features such as the 'reversed order' clause type which occurs as the last clause of the paragraph.

5. Sentence - the paragraph may be composed of one or more sentences. Sentences are sometimes defined as a 'grammatical unit of speech, potentially isolatable as a complete utterance of one speaker'. Features of pause, intonation, markers such as sentence introducers in the Mesquital Otomi may all be relevant to the definition in a particular language.

## APPENDIX A

## LINGUISTIC LABELS

Once classes and types of units have been set up at any rank they need to be given names or labels. The following is a list of labels commonly used in linguistics together with samples of English to which they might be applied. It must be stressed that in any language these terms should not be used unless the unit is shown to be different in function or structure from other units at the same rank, and each label must be defined afresh for each language.

MORPHEME RANK (see Nida, Morphology, pp.166-169 for further labels)

ASPECT (kind of action)

- Continuative - action which continues
- Inceptive - beginning of action
- Frequentive - frequent action
- Completive - action which is finished/completed
- Incompletive - action which is not completed

MODE/MOOD (see modifications of sentence and clause)

VOICE (relationship of participants to action)

- Active - the subject performs the action: He came.
- Passive - the subject is goal of the action: He was shot.
- Reflexive - the subject acts upon himself: He shot himself.
- Reciprocal - plural subjects act upon each other: They shot each other.
- Causative - the actor causes an action: He caused her to come.

PERSON

- First person - relating to speaker: I, we
- Second person - relating to hearer: you
- Third person - relating to someone spoken about: he, she, it, they
- First person inclusive - relating to speaker and hearer
- First person exclusive - relating to speaker and others, but not to hearer

GENDER

- Masculine
- Feminine
- Neuter

NUMBER

- Singular - one
- Dual - two
- Plural - more than one (or two, depending on whether language has dual)
- Collective - as a body; every
- Distributive - as individuals; each

(Direct) Object  
 Subject  
 Temporal - refers to time  
 Topic - the nominal phrase referred to  
 Verbal/Verb - has a verb as head

#### TYPES (based on head of phrase)

Adjectival - adjective head  
 Adverbial - adverb head  
 Locative - refers to location  
 Nominal - noun or noun-substitute head  
 Temporal - refers to time  
 Verbal - verb head

#### CLAUSE RANK

CLASSES OF CLAUSE often take the same labels as those of the sentence types in which they occur. See 'Sentence Rank'.

Di-transitive - 2 NPo, often NPio and NPo: John gave Mary a present.  
 Complex transitive - 2 NPo, usually NPo and NPcomp: She thought him a dear.  
 Transitive - one NPo: She kissed him.  
 Semi-transitive - verb of motion and Locative in place of NPo: He went home.  
 Intransitive - no NPo: He slept peacefully.  
 Stative - often description of state: John was happy.  
 Impersonal - no NPs or NPo: It was springtime.  
 Active - optional NPo; used where there is no distinction between transitive and intransitive.  
 Attributive/Descriptive - may be verbal or non-verbal, with AdjP as nucleus  
 Equative - usually 2 NP, a topic and a comment: John was Mary's sweetheart.  
 Locative - may be verbal or non-verbal clause; if the latter, then then LP as nucleus  
 Nominal - NP as nucleus  
 Eventive : The weather turned cold.

#### SENTENCE RANK

##### CLASSES OF SENTENCE

Declarative/Indicative - statement: He lived in a castle beside a great forest.  
 Imperative - command: Find the silver slipper without delay.  
 Interrogative - question: Did he ever find it?  
 Response - answer: Yes, I think so.  
 Initiating sentences: Long ago, there lived a good and wise king.  
 Concluding sentences: And so they all lived happily ever after.

##### TYPES OF SENTENCE

See pages 65 - 66

## APPENDIX B

## ABBREVIATIONS AND ALPHABETIZING INSTRUCTIONS

Abbreviations (for use in formulas and charts)

Sometimes the longer forms of the abbreviations (or even the full forms) will be more suitable, if the context does not make the meaning of the short form clear.

Acc	Accompaniment	M/mkr	Marker (e.g. TM Tense Marker, Fut M Future Marker, etc.)
Adj	Adjective	m/masc	Masculine
Adv	Adverb	Mod	Modifier
Art	Article	N	Noun
Aux	Auxiliary	n/neut	Neuter
Ben	Benefactive	Neg	Negative
C	Consonant	N-er	Nominaliser
Caus	Causative	Num	Number, Numeral
Cl	Clause	O/Obj	Object
Coll	Collective	P	Phrase (e.g. NP Noun Phrase, (Adv P Adverbial Phrase etc.)
Cond	Conditional		
Conj	Conjunctive	p/pers	Person
Dem	Demonstrative	Perf	Perfective
Des	Descriptive	pl	Plural
Det	Determiner	Pn	Pronoun
ditr/ditrans	Ditransitive	Poss	Possessive
Emph	Emphatic	Post	Postposition
excl	Exclusive	Prep	Preposition
f/fem	Feminine	Pres	Present
Fut	Future Tense	Px	Prefix
Hon	Honorific	Qu	Qualifier
Impv	Imperative	Recip	Reciprocal
Ind	Indicative	Refl	Reflexive
Inc	Inceptive	rs	Rankshifted
incl	Inclusive	Rt	Root
Interrog/Q	Interrogative	S	Sentence
intr/intrans	Intransitive	S/Sbj	Subject
IO	Indirect Object	Seq	Sequential
L/Loc	Locative	sg/sing	Singular

## APPENDIX C

## TYPES OF PROCESS

To state phonological conditioning by means of general statements it is often convenient to describe the phonological process which is involved. The following are the most common types of process:

Assimilation - Dissimilation  
 Reduction - Addition  
 Metathesis  
 Replacement  
 Reduplication

## 1. Assimilation and Dissimilation

Assimilation: a phoneme becoming phonetically more similar to an influencing phoneme.

Dissimilation: a phoneme becoming less similar to an influencing phoneme.

## (a) Factors involved

## (i) Progressive vs Regressive changes

Progressive: a phoneme influencing a following phoneme.

Assimilation -  $n + p \rightarrow nt$  Dissimilation -  $n + t \rightarrow nk$

Regressive: a phoneme influencing a preceding phoneme.

Assimilation -  $n + p \rightarrow mp$  Dissimilation -  $n + t \rightarrow nt$

## (ii) Contiguous vs non-contiguous phonemes

Contiguous: phonemes next to each other.

Assimilation -  $ne + ip \rightarrow niip$  Dissimilation -  $ni + ip \rightarrow nuiip$

Non-contiguous: phonemes separated from each other.

Assimilation -  $ne + pi \rightarrow nipi$  Dissimilation -  $ni + pi \rightarrow nipi$

(Dissimilation usually involves non-contiguous phonemes)

## (iii) Types of articulation

Point of articulation: bilabial, alveolar, velar etc.

$\eta + d \rightarrow \eta g$   $f + \eta \rightarrow x\eta$

Manner of articulation: plosive, nasal, continuant, etc.

$\eta + d \rightarrow \eta n$   $x + m \rightarrow \eta m$

Voiced, glottalised, etc.

$t + z \rightarrow ts$   $n + f \rightarrow nv$

## (iv) Partial vs complete

Partial: to either point or manner, producing similar phonemes.

$n + p \rightarrow nm$   $f + k \rightarrow fx$

Complete: to both point and manner, producing identical phonemes.

$n + p \rightarrow nn$   $f + k \rightarrow ff$

(Any dissimilation may be regarded as complete, though degrees of dissimilation may be indicated.)

## 2. Reduction and Addition

### (a) Consonants

Reduction of consonant clusters: when morphemes occur next to each other, one or the other, and sometimes both, may lose one or more of their contiguous consonant phonemes.

at- + kiko > akiko but at- + iki > atiko

Fusion: a combination of assimilation and loss in which evidence of the original combination is still preserved.

ots/ + su > otsu

Developed phonemes: in certain clusters of consonants there tend to develop other consonants, sometimes called 'transition' consonants. These are quite rare.

m + r > mbr    m + k > mpk    n + r > ngr    n + r > nir  
 n + s > nds    n + t > nkt    z + r > zdr    l + r > ldr

### (b) Vowels

Loss of vowel phonemes: generally results from reduction of a cluster of vowels, some types of stress or position of vowel at the end of a word. Loss of vowels in unstressed syllables, like 'weakening' of vowels, is quite common.

soga:'ti + ko > soga:t'ko

Compensatory lengthening: when a consonant or vowel is lost, a contiguous vowel may be lengthened to compensate for the loss of the segmental unit.

ar + liru > a:liru    but    ar + bonu > arbonu

Differences in vowel length due to open or closed syllables: there is a tendency for vowels in open syllables to be long, and those in closed syllables to be short.

u + ba:k > u:ba:k    but    u: + tris > utris

## 3. Metathesis

There is no change in the phonemes, just in the order of their occurrence. The phonemes which change position may or may not be contiguous.

taj + pa > tapja    ale + ra > arela

## 4. Replacement

One phoneme completely replaces another

ma<sup>u</sup>s > ma<sup>i</sup>s    'mouse'  
 siŋ > səŋ    'sing'

5. It is also possible to make general statements about other phonological processes such as reduplication. Reduplication may be partial or complete.

Complete: the whole root or stem is repeated. This is generally treated as a repetitive compound.

kobe    'penny'    kobe-kobe    'a penny each'

Partial: the repeated portion of part of the root or stem is called a 'reduplicative'. Such reduplicatives may occur preposed, interposed, or postposed.

unſe    'one side'    unſenſe    'only one side'